

Esc

Exit current screen
Bring up menu

F1

Domestic advisor

F2

Financial advisor

F3

Civics advisor

F4

Foreign advisor

F5

Military advisor
Quick Save

F6

Technology advisor

F7

Religion advisor
Corporation

F8

Victory
Quick Load

F9

Demograph

F10

Capital City

F11

Toggle
Globe View

F12

Civilopedia

1

2

3

4

5

6

7

8

9

0

Red selected unit or group to that number

Save a production queue (in city screen)

Tab

Chat to team
Chat/Event log

Q

Quarry

W

Wait
Watermill
Whaling Boat
Worldbuilder

E

Explore
(automated)

R

Road
Railroad
Road-to mode
Toggle flag res

T

Cottage
Toggle grid

Y

Toggle tile yields

U

Unload
(off ship)

I

Farm
Remove
interface
Minimize
interface

O

Offshore Platform
Change perspective
Options Menu

P

Ping map
Pasture
Plantation
Pillage
Sea Patrol

Enter

Cycle units
Advance to next turn
Exit City Screen
Force turn to end

Caps

A

Automate Worker
Force move units
w. queued orders

S

Sentry
Air Strike
Mark tile
Save game

D

Change player
name, e-mail
Flying cam mode

F

Fortify
Fish nets
Forest Preserve
Satellite view
Flying cam mode

G

Go-to mode
all units
same type units

H

Camp

J

Workshop

K

Lumbermill
Load (onto ship)
Load game

Enter

Cycle units
Advance to next turn
Exit City Screen
Force turn to end

Shift

(+LMB on item in city screen)
add item to the end
of production queue

Z

X

Center on unit
Remove
forest/jungle
Activate all units
of the same type

V

B

Build city
Bombard
Air bomb mode
Toggle bare map

N

Trade network
(automated)

M

Mine
Toggle music

<

Cycle to prev. unit
(same tile)

>

Cycle to next unit
(same tile)

?

Cycle through active
Workers

Ctrl

(+LMB on item in city screen)
add item to the beginning
of production queue

Alt

(+LMB on item in city screen)
produce item
indefinitely

Space

Skip turn

Drag map

select All Units on tile

select All Units of the same type on tile

on city bar:
select city
select multiple cities
select all cities
select all cities on same continent

on opponent name:
open diplomacy screen
declare war
open trade window

(+mouseover enemy unit)
show combat odds

set tile as Rally Point for new units

move all units from the same tile to the new tile

on city bar:
set Rally Point

Zoom map in/out

Cycle through units (on tile)

Cycle cities (in city screen)

Insert

Open nearest friendly city screen

Delete

Delete unit

↑

Lock camera angle 45° clockwise

Rotate camera clockwise

↓

Jump to previous city (in city screen)

Home

Cycle through cities

End

Cycle through cities

↑

Lock camera angle 45° counterclockwise

Rotate camera counterclockwise

↓

Jump to next city (in city screen)

Pg Up

Camera zoom in

7

Move unit ↖

8

Move unit ↗

9

Move unit ↘

Pg Down

Camera zoom out

4

Cycle cities (in city screen)

Move unit ↖

5

Center on unit

6

Cycle cities (in city screen)

Move unit ↗

1

Move unit ↙

2

Move unit ↘

3

Move unit ↗

SCREENS

Esc

Exit current screen

Bring up Menu

F1

Domestic Advisor screen

F2

Financial Advisor screen

F3

Civics Advisor screen

F4

Foreign Advisor screen

F5

Military Advisor screen

F6

Technology Advisor screen

F7

Religion Advisor screen

Shift F7

Corporation Advisor screen

F8

Victory screen

F9

Demographic screen

F10

Capital City screen

F11

Toggle Globe View screen

F12

Civilopedia screen

Ctrl E

Espionage screen

Ctrl W

Access Worldbuilder

Ctrl O

Options Menu

CITY SCREEN

Insert

Open nearest friendly city

↔

Cycle cities

NW

Cycle cities

Alt LMB

+item: produce indefinitely

Ctrl LMB

+item: add to begin. of queue

Shift LMB

+item: add to end of queue

Enter

Exit city screen

MMB

Exit city screen

GAMEPLAY

Alt Q

Retire

Pause

Pause game

Enter

Next turn

Space

Skip turn

Ctrl L

Load Game

Ctrl S

Save Game

Shift F8

Quick Load

Shift F5

Quick Save

Ctrl M

Toggle music

Ctrl R

Toggle flag resources

Ctrl T

Toggle grid

Ctrl Y

Toggle tile yields

Ctrl B

Toggle bare map

Alt B

Remove interface

Ctrl I

Minimize interface

P

Ping the map

Alt S

Mark tile

Prt Scr

Take screenshot

LMB

+city bar: select city

Shift LMB

+city bar: select multiple cities

Alt LMB

+city bar: select all cities on the same continent

Ctrl LMB

+city bar: set Rally Point

Shift RMB

Drag map

LMB

+opponent name: diplomacy

Alt LMB

+opponent name: declare war

Ctrl LMB

+opponent name: trade

UNIT ACTIONS

B

Build City (Settlers)

Bombard

W

Wait

F

Fortify

S

Sentry / Air Strike (Air units)

E

Explore (auto)

Shift P

Pillage

G

Go-to Mode

Shift G

Go-to Mode (all units)

Ctrl G

Go-to Mode (same type units)

L

Load (onto ship)

U

Unload (off ship)

Ctrl P

Sea Patrol

Alt R

Rebase mode

Del

Delete unit

LMB

Select unit

Alt LMB

Select all units on tile

Ctrl LMB

Select same type units on tile

Ctrl C

Activate all same type units

Ctrl A

Force all units with queued orders to move

NumPad 5

Center on unit

NumPad

Move unit

RMB

Move unit to selected tile

Alt RMB

Set Rally Point

, or MW

Cycle units in the same tile

↖

Cycle to prev. selected unit

/

Cycle through active workers

+enemy unit: combat odds

Alt MO

mouse wheel

WORKER BUILDS

A

Automate

R

Road/Railroad

Alt R

Road-to Mode

T

Cottage

I

Farm

M

Mine

L

Lumbermill

K

Workshop

Q

Quarry

H

Camp

F

Fishing nets

Shift P

Offshore Platform

Shift W

Pasture/Plantation

Shift W

Winery, Windmill, Watermill, Whaling Boat

Shift F

Forest Preserve

Ctrl F

Fort

Alt C

Clear Forest/Jungle

N

Trade Network (auto)

Shift Ctrl C

Improve nearest city

CAMERA

PgUp/PgDn

Zoom in/out

NW

Zoom in/out

Shift

↔

Rotate

Ctrl

↔

Lock 45° clockwise

Ctrl

↔

Lock 45° counterclockwise

Alt F

Satellite view

Ctrl F

Flying mode*

Alt O

Change perspective

*must be enabled in INI file

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SID MEIER'S
CIVILIZATION
BEYOND THE SWORD

CIVILIZATION IV: Beyond the Sword Reference Guide

English version

assembling and graphic layout
Anion
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revision and proofreading
Jason77024

5th edition
(updated 7th April 2008)

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World Size	Base features*	Some modifiers			
Duel 960 tiles 24 H × 40 W	2 players default 4 target cities	prereq. buildings** ×1.00 research cost ×1.00 trade profit ×0.80	war weariness ×1.50 can draft up to 2 units per turn	distance maint. ×0.50 no. cities maint. ×0.45 colony maint. ×0.67 corporation maint. ×4.00	
Tiny 1664 tiles 32 H × 52 W	3 players default 4 target cities	prereq. buildings ×1.00 research cost ×1.10 trade profit ×0.70	war weariness ×1.30 can draft up to 3 units per turn	distance maint. ×0.60 no. cities maint. ×0.40 colony maint. ×0.60 corporation maint. ×2.00	
Small 2560 tiles 40 H × 64 W	5 players default 5 target cities	prereq. buildings ×1.25 research cost ×1.20 trade profit ×0.60	war weariness ×1.10 can draft up to 4 units per turn	distance maint. ×0.70 no. cities maint. ×0.35 colony maint. ×0.52 corporation maint. ×1.50	
Standard 4368 tiles 52 H × 84 W	7 players default 5 target cities	prereq. buildings ×1.50 research cost ×1.30 trade profit ×0.50	war weariness ×0.90 can draft up to 5 units per turn	distance maint. ×0.80 no. cities maint. ×0.30 colony maint. ×0.45 corporation maint. ×1.00	
Large 6656 tiles 64 H × 104 W	9 players default 6 target cities	prereq. buildings ×1.75 research cost ×1.40 trade profit ×0.40	war weariness ×0.70 can draft up to 6 units per turn	distance maint. ×0.90 no. cities maint. ×0.25 colony maint. ×0.37 corporation maint. ×0.75	
Huge 10,240 tiles 80 H × 128 W	11 players default 6 target cities	prereq. buildings ×2.00 research cost ×1.50 trade profit ×0.30	war weariness ×0.50 can draft up to 7 units per turn	distance maint. ×1.00 no. cities maint. ×0.20 colony maint. ×0.30 corporation maint. ×0.50	

* Based on XML code; more **players** possible in Custom Games; **target cities** determines how many "largest cities" get the happiness bonus from Representation civic and how far apart the map generator tries to set start positions.

** Some Buildings and National Wonders require specific number of other buildings to be built (see: pages 24–29, 32).

Game Length	Multiplier*	Other modifiers			
Marathon 1500 turns	×3.00**	Anarchy length ×2.00 Golden Age length ×2.00 Barbarians ×4.00	Hurry effect ×0.33 Hurry anger length ×3.00	Inflation Victory delay	×0.10 ×3.00
Epic 750 turns	×1.50	Anarchy length ×1.50 Golden Age length ×1.25 Barbarians ×1.50	Hurry effect ×0.66 Hurry anger length ×1.50	Inflation Victory delay	×0.20 ×1.50
Normal 500 turns	×1.00	Anarchy length ×1.00 Golden Age length ×1.00 Barbarians ×1.00	Hurry effect ×1.00 Hurry anger length ×1.00	Inflation Victory delay	×0.30 ×1.00
Quick 330 turns	×0.67	Anarchy length ×0.67 Golden Age length ×0.80 Barbarians ×0.67	Hurry effect ×1.50 Hurry anger length ×0.67	Inflation Victory delay	×0.45 ×0.67

* Based on XML code; affects the following: city growth rate (food), unit training (hammers), building, wonder, and project construction (hammers), tech research (beakers); building improvements (turns), improvement upgrades (turns), city culture points, Great People Birth Rate points, and Great Work effects.

** except for unit training cost (×2.00).

REFERENCE GUIDE econo-print edition

	Base bonuses	Tribal Village Results*	Modifiers	Others
Settler	+4 health +6 happy 24 free units +2 AI attitude 3 free techs: Wheel, Agriculture, Mining	20% technology, high gold 10% low gold 10% Settler, Worker, Warrior 5% Scout, experience, healing, maps no barbarians	research $\times 0.60$ unit cost $\times 0.20$ distance maint. $\times 0.45$ civic upkeep $\times 0.50$ inflation $\times 0.60$ AI costs $\times 1.60$	25% animal attack probability animal strength: -70% barbarians in 50 turns** barb. city creation prob.: 40% 5 free wins vs. barbarians barbarian strength: -40%
Chieftain	+3 health +5 happy 18 free units +1 AI attitude 2 free techs: Wheel, Agriculture	20% high gold 15% technology 10% low gold 10% Settler, Worker, Warrior 5% Scout, experience, healing, maps 5% barbarians (only weak)	research $\times 0.75$ unit cost $\times 0.30$ distance maint. $\times 0.55$ civic upkeep $\times 0.60$ inflation $\times 0.70$ AI costs $\times 1.30$	50% animal attack probability animal strength: -60% barbarians in 45 turns** barb. city creation prob.: 50% 4 free wins vs. barbarians barbarian strength: -30%
Warlord	+2 health +4 happy 12 free units 1 free tech: Wheel	15% gold (high or low) 15% technology 10% Warrior, maps 5% Settler, Worker, Scout 5% experience, healing 5% barbarians (strong or weak)	research $\times 0.90$ unit cost $\times 0.40$ distance maint. $\times 0.65$ civic upkeep $\times 0.70$ inflation $\times 0.80$ AI costs $\times 1.10$	75% animal attack probability animal strength: -50% barbarians in 40 turns** barb. city creation prob.: 50% 3 free wins vs. barbarians barbarian strength: -20%
Noble	+2 health +4 happy 8 free units -1 AI attitude	20% low gold 15% high gold 10% Warrior, technology, exp., maps 5% Scout, healing 5% strong barbarians 10% weak barbarians	research $\times 1.00$ unit cost $\times 0.50$ distance maint. $\times 0.75$ civic upkeep $\times 0.80$ inflation $\times 0.90$ AI costs $\times 1.00$	85% animal attack probability animal strength: -40% barbarians in 35 turns** barb. city creation prob.: 60% 2 free wins vs. barbarians barbarian strength: -10%
Prince	+2 health +4 happy 6 free units -1 AI attitude	20% low gold 10% Warrior, technology, experience, high gold, maps 5% Scout, healing 5% strong barbarians 15% weak barbarians	research $\times 1.10$ unit cost $\times 0.60$ distance maint. $\times 0.85$ civic upkeep $\times 0.90$ inflation $\times 0.95$ AI costs $\times 0.95$	90% animal attack probability animal strength: -30% barbarians in 30 turns** barb. city creation prob.: 60% 1 free win vs. barbarians barbarian strength: -5%
Monarch	+2 health +4 happy 4 free units -1 AI attitude AI starts with 1 Archer extra	20% low gold 10% Warrior, technology, experience, maps 5% Scout, healing, high gold 10% strong barbarians 15% weak barbarians	research $\times 1.15$ unit cost $\times 0.70$ distance maint. $\times 0.90$ civic upkeep $\times 0.95$ inflation $\times 1.00$ AI costs $\times 0.90$	90% animal attack probability animal strength: -20% barbarians in 25 turns** barb. city creation prob.: 70%
Emperor	+2 health +4 happy 3 free units -1 AI attitude AI starts with: 2 Archers, 2 Scouts, and 1 Settler	25% low gold 10% technology, maps 5% Warrior, Scout, experience, healing, high gold 15% weak barbarians 15% strong barbarians	research $\times 1.20$ unit cost $\times 0.80$ distance maint. $\times 0.95$ civic upkeep $\times 1.00$ inflation $\times 1.00$ AI costs $\times 0.85$	90% animal attack probability animal strength: -10% barbarians in 20 turns** barb. city creation prob.: 70%
Immortal	+2 health +4 happy 2 free units -1 AI attitude AI starts with: 3 Archers, 2 Scouts, 1 Worker, 1 Settler	25% low gold 10% technology, maps 5% Warrior, Scout, experience, healing 15% weak barbarians 20% strong barbarians	research $\times 1.25$ unit cost $\times 0.90$ distance maint. $\times 1.00$ civic upkeep $\times 1.00$ inflation $\times 1.00$ AI costs $\times 0.80$	90% animal attack probability animal strength: -5% barbarians in 15 turns** barb. city creation prob.: 80%
Deity	+2 health +4 happy 1 free unit -1 AI attitude AI starts with: 4 Archers, 2 Scouts, 1 Worker, 2 Settlers	25% low gold 10% technology 5% Warrior, Scout, experience, healing, maps 10% weak barbarians 30% strong barbarians	research $\times 1.30$ unit cost $\times 1.00$ distance maint. $\times 1.00$ civic upkeep $\times 1.00$ inflation $\times 1.00$ AI costs $\times 0.60$	90% animal attack probability barbarians in 10 turns** barb. city creation prob.: 80%

* Based on XML code; represents probabilities of results from Tribal Villages.
 ** Based on XML code; represents AI cost modifiers for: growth rate, unit training, city production (Wonders never less than $\times 1.00$).
 *** The first barbarian city is founded five turns after they first appear.



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Civilization	Free Techs	Unique Unit	Uniq. Building	Leaders	Traits
 American Empire	Fishing Agriculture	Navy Seal (Marine)	Mall (Supermarket)	Lincoln Roosevelt Washington	<i>Philosophical, Charismatic Industrious, Organized Expansive, Charismatic</i>
 Arabian Empire	Mysticism Wheel	Camel Archer (Knight)	Madrasa (Library)	Saladin	<i>Spiritual, Protective</i>
 Aztec Empire	Mysticism Hunting	Jaguar (Swordsman)	Sacrificial Altar (Courthouse)	Montezuma	<i>Aggressive, Spiritual</i>
 Babylonian Empire	Wheel Agriculture	Bowman (Archer)	Garden (Colosseum)	Hammurabi	<i>Aggressive, Organized</i>
 Byzantine Empire	Mysticism Wheel	Cataphract (Knight)	Hippodrome (Theatre)	Justinian I	<i>Spiritual, Imperialistic</i>
 Carthaginian Empire	Fishing Mining	Numid. Cavalry (Horse Archer)	Cothon (Harbor)	Hannibal	<i>Financial, Charismatic</i>
 Celtic Empire	Mysticism Hunting	Gallic Warrior (Swordsman)	Dun (Walls)	Boudica Brennus	<i>Aggressive, Charismatic Spiritual, Charismatic</i>
 Chinese Empire	Agriculture Mining	Cho-Ko-Nu (Crossbowman)	Pavilion (Theatre)	Mao Zedong Qin Shi Huang	<i>Expansive, Protective Industrious, Protective</i>
 Dutch Empire	Fishing Agriculture	East Indiaman (Galleon)	Dike (Levee)	Willem van Oranje	<i>Creative, Financial</i>
 Egyptian Empire	Wheel Agriculture	War Chariot (Chariot)	Obelisk (Monument)	Hatshepsut Ramesses II	<i>Spiritual, Creative Spiritual, Industrious</i>
 English Empire	Fishing Mining	Redcoat (Rifleman)	Stock Exchange (Bank)	Churchill Elizabeth Victoria	<i>Charismatic, Protective Philosophical, Financial Financial, Imperialistic</i>
 Ethiopian Empire	Hunting Mining	Oromo Warrior (Musketeer)	Stele (Monument)	Zara Yaqob	<i>Creative, Organized</i>
 French Empire	Wheel Agriculture	Musketeer (Musketeer)	Salon (Observatory)	De Gaulle Louis XIV Napoleon	<i>Industrious, Charismatic Industrious, Creative Organized, Charismatic</i>
 German Empire	Hunting Mining	Panzer (Tank)	Assembly Plant (Factory)	Bismarck Frederick	<i>Expansive, Industrious Philosophical, Organized</i>
 Greek Empire	Fishing Hunting	Phalanx (Axeman)	Odeon (Colosseum)	Alexander Pericles	<i>Philosophical, Aggressive Philosophical, Creative</i>
 Holy Roman Empire	Mysticism Hunting	Landsknecht (Pikeman)	Rathaus (Courthouse)	Charlemagne	<i>Protective, Imperialistic</i>
 Incan Empire	Mysticism Agriculture	Quechua (Warrior)	Terrace (Granary)	Huayna Capac	<i>Industrious, Financial</i>



Culture

Buildings

- Broadcast Tower +50% culture
- Buddhist Stupa / Christian Cathedral / Confucian Academy / Hindu Mandir / Islamic Mosque / Jewish Synagogue / Taoist Pagoda +50% culture
- Stele* +25% culture
- Pavilion* +25% culture
- Academy +4 culture
- Madrasa* +4 culture
- Military Academy +3 culture
- Theatre / Pavilion* +3 culture
- University / Seowon* +3 culture
- Library +2 culture
- Monasteries (until Scientific Method) +2 culture
- Temples +1 culture
- Castle +1 culture
- Monument / Obelisk* / Totem Pole* / Stele* (until Astronomy) +1 culture

- Hippodrome* / Odeon* +3 culture
- Terrace* +2 culture

Wonders

- Hermitage +100% culture
- Broadway, Hollywood, Rock 'n' Roll each +50% culture
- Sistine Chapel +10 culture
- per Specialist extra +2 culture
- each State Religion building extra +5 culture
- Mausoleum of Maussollos, Notre Dame, Parthenon, Statue of Zeus, Taj Mahal, Versailles each +10 culture



Great People Birth Rate

Buildings

- Forum* as unique bonus +25% GP points

Wonders

- Parthenon (until Scientific Method) all cities +50% GP points
- National Epic +100% GP points
- any World Wonder +2 GP points
- any National Wonder +1 GP point
- all Religion Shrines +1 GP point
- all Corporation HQs +1 GP point

Technologies

- Music free Great Artist for first to discover
- Fusion free Great Engineer for first to discover

- Angkor Wat, Great Library, Hagia Sophia, Oracle, Shwedagon Paya, Spiral Minaret, Stonehenge, Temple of Artemis, University of Sankore each +8 culture
- Chichen Itza, Colossus, Eiffel Tower, Globe Theatre, Great Lighthouse, Hanging Gardens, Pyramids, Statue of Liberty each +6 culture
- Cristo Redentor +5 culture
- Apostolic Palace, Forbidden Palace, Heroic Epic, Moai Statues, Mt. Rushmore, National Epic, Oxford University each +4 culture
- all Religion Shrines +4 culture
- National Park +3 culture
- Great Wall, Red Cross each +2 culture
- all Corporation HQs +2 culture

Corporations

- Civilized Jewelers Inc every Gems, Gold, Silver +4 culture
- Creative Constructions every Aluminum, Copper, Iron, Marble, Stone +3 culture
- Sid's Sushi Co every Clam, Crab, Fish, Rice +2 culture

Technologies

- Drama can adjust culture rate
- Music can build Culture

Civics

- Free Speech all cities +100% culture

Leader traits

- Creative trait all cities +2 culture

Others

- Buildings older than 1000 years will generate double culture

- Fascism free Great General for first to discover
- Economics free Great Merchant for first to discover
- Physics free Great Scientist for first to discover
- Communism free Great Spy for first to discover

Wonders

- Statue of Liberty all cities on that continent 1 free Specialist

Civics

- Pacifism all cities with State Religion +100% GP points
- Caste System unlimited Artists, Merchants, Scientists
- Mercantilism all cities 1 free Specialist

Leader traits

- Philosophical trait all cities +100% GP points



Trade Routes

Buildings

- **Airport** +1 Trade Route
- **Castle** (until **Economics**) +1 Trade Route
- **Harbor / Cothon*** +50% Trade Route commerce also Cothon* +1 Trade Route
- **Customs House / Feitoria*** +100% commerce from intercontinental foreign Trade Routes

Wonders

- **Great Lighthouse** (until **Corporation**) all coastal cities +2 Trade Routes
- **Temple of Artemis** (until **Scientific Method**) +100% Trade Route commerce in host city

Technologies

- **Currency** all cities +1 Trade Route
- **Corporation** all cities +1 Trade Route

Civics

- **Free Market** all cities +1 Trade Route
- **Mercantilism** no foreign Trade Routes



City Defense

Buildings

- **Walls / Dun*** +50% city defense also -50% bombardment damage, except **Gunpowder Units**
- **Castle / Citadel*** +50% city defense also -25% bombardment damage, except **Gunpowder Units**
- **Bomb Shelter** -50% damage from **Nukes**
- **Bunker** -50% damage from **Air Units**
- **Hospital** heals units +10% extra per turn

Wonders

- **Chichen Itza** (until **Rifling**) in all cities +25% city defense
- **SDI** in all cities +75% chance of intercepting **Nukes**
- **Great Wall** prevents Barbarians from entering borders
- **Statue of Zeus** enemies suffer +100% War Weariness

Technologies

- **Communism, Fascism** enables Permanent Alliances
- **Military Tradition** enables Defensive Pacts

Military Experience (XP)



Buildings

- **Barracks / Ikhanda*** new **Land Units** +3 XP
- **Stable** (until **Advanced Flight**) new **Mounted Units** +2 XP
- **Ger*** (until **Advanced Flight**) new **Mounted Units** +4 XP
- **Drydock** new **Naval Units** +4 XP
- **Airport** new **Air Units** +3 XP
- **Citadel*** as unique bonus new **Siege Weapons** +5 XP
- **Totem Pole*** as unique bonus new **Archery Units** +3 XP
- **Dun*** as unique bonus new **Land Units** free **Guerilla I**
- **Trading Post*** as unique bonus new **Naval Units** free **Navigation I**

Wonders

- **West Point** all new units +4 XP
- **Pentagon** in all cities all new units +2 XP
- **Red Cross** all new units free **Medic I**
- **Great Wall** inside borders +100% Great General Emergence

Technologies

- **Gunpowder** enables **Pinch**
- **Military Science** enables **Blitz, Commando**
- **Refrigeration** +1 move for **Naval Units**

Civics

- **Vassalage** all new units +2 XP
- **Theocracy** all cities with **State Religion** all new units +2 XP
- **Nationhood** can draft up to 3 units per turn

Leader traits

- **Aggressive trait** all **Melee** and **Gunpowder Units** free **Combat I**
- **Charismatic trait** -25% XP needed for unit promotions
- **Imperialistic trait** +100% Great General Emergence
- **Protective trait** all **Archery** and **Gunpowder Units** free **City Garrison I** and **Drill I**

Espionage



Buildings

- **Scotland Yard** +100% espionage
- **Intelligence Agency** +50% and per turn +8 espionage
- **Security Bureau** +8 espionage also +50% defense against espionage, helps thwart rival spies
- **Jail / Mausoleum*** +50% and per turn +4 espionage
- **Castle** (until **Economics**) +25% espionage
- **Courthouse / Rathaus*** / **Sacrificial Altar*** / **Ziggurat*** per turn +2 espionage

Civics

- **Nationhood** all cities +25% espionage

Civilization

Free Techs

Unique Unit

Uniq. Building

Leaders

Traits

	Indian Empire	Mysticism Mining	Fast Worker (Worker)	Mausoleum (Jail)	Asoka Gandhi	<i>Spiritual, Organized Philosophical, Spiritual</i>
	Japanese Empire	Fishing Wheel	Samurai (Maceman)	Shale Plant (Coal Plant)	Tokugawa	<i>Aggressive, Protective</i>
	Khmer Empire	Hunting Mining	Ballista Elephant (War Elephant)	Baray (Aqueduct)	Suryavarmen II	<i>Expansive, Creative</i>
	Korean Empire	Mysticism Mining	Hwacha (Catapult)	Seowon (University)	Wang Kon	<i>Financial, Protective</i>
	Malinese Empire	Wheel Mining	Skirmisher (Archer)	Mint (Forge)	Mansa Musa	<i>Spiritual, Financial</i>
	Maya Empire	Mysticism Mining	Holkan (Spearman)	Ball Court (Colosseum)	Pacal II	<i>Expansive, Financial</i>
	Mongolian Empire	Wheel Hunting	Keshik (Horse Archer)	Ger (Stable)	Genghis Khan Kublai Khan	<i>Aggressive, Imperialistic Aggressive, Creative</i>
	Native American Empire	Fishing Agriculture	Dog Soldier (Axeman)	Totem Pole (Monument)	Sitting Bull	<i>Philosophical, Protective</i>
	Ottoman Empire	Wheel Agriculture	Janissary (Musketman)	Hammam (Aqueduct)	Mehmed II Suleiman	<i>Expansive, Organized Philosophical, Imperialistic</i>
	Persian Empire	Agriculture Hunting	Immortal (Chariot)	Apothecary (Grocer)	Cyrus Darius I	<i>Charismatic, Imperialistic Financial, Organized</i>
	Portuguese Empire	Fishing Mining	Carrack (Caravel)	Feitoria (Customs House)	Joao II	<i>Expansive, Imperialistic</i>
	Roman Empire	Fishing Mining	Praetorian (Swordsman)	Forum (Market)	Augustus Caesar Julius Caesar	<i>Industrious, Imperialistic Organized, Imperialistic</i>
	Russian Empire	Hunting Mining	Cossack (Cavalry)	Research Inst. (Laboratory)	Catherine Peter Stalin	<i>Creative, Imperialistic Philosophical, Expansive Aggressive, Industrious</i>
	Spanish Empire	Mysticism Fishing	Conquistador (Cuirassier)	Citadel (Castle)	Isabella	<i>Spiritual, Expansive</i>
	Sumerian Empire	Wheel Agriculture	Vulture (Axeman)	Ziggurat (Courthouse)	Gilgamesh	<i>Creative, Protective</i>
	Viking Empire	Fishing Hunting	Berserker (Maceman)	Trading Post (Lighthouse)	Ragnar	<i>Aggressive, Financial</i>
	Zulu Empire	Agriculture Hunting	Impi (Spearman)	Ikhanda (Barracks)	Shaka	<i>Aggressive, Expansive</i>

Leaders, Traits, and Favourites



Alexander
Greek Empire

Philosophical, Aggressive
fav. civic: Vassalage
fav. religion: none



Asoka
Indian Empire

Spiritual, Organized
fav. civic: Free Religion
fav. religion: Buddhism



Augustus Caesar
Roman Empire

Imperialistic, Industrious
fav. civic: Representation
fav. religion: none



Bismarck
German Empire

Expansive, Industrious
fav. civic: Nationhood
fav. religion: Christianity



Boudica
Celtic Empire

Charismatic, Aggressive
fav. civic: Universal Suffrage
fav. religion: none



Brennus
Celtic Empire

Spiritual, Charismatic
fav. civic: Organized Religion
fav. religion: none



Catherine
Russian Empire

Creative, Imperialistic
fav. civic: Hereditary Rule
fav. religion: Christianity

AI behaviour*

favors: military, growth
builds wonders: sometimes
trains units: very often
aggression level: very high
espionage level: normal
tech trading: averse, 30%

relation factor: 0
peace probability (%): 0/20/80/100
attack courage: very high
will raze city: never
refuses to talk delay: medium
warmonger respect: 2

favors: religion, science
builds wonders: very often
trains units: sometimes
aggression level: medium
espionage level: medium
tech trading: moderate, 20%

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0

favors: production, military
builds wonders: very often
trains units: moderate
aggression level: medium
espionage level: normal
tech trading: willing, 40%

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

favors: military
builds wonders: often
trains units: often
aggression level: medium
espionage level: high
tech trading: averse, 70%

relation factor: 6
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

favors: military, growth
builds wonders: very rarely
trains units: often
aggression level: very high
espionage level: low
tech trading: moderate, 30%

relation factor: 2
peace probability (%): 0/40/100/100
attack courage: very high
will raze city: rarely
refuses to talk delay: long
warmonger respect: 1

favors: military, religion
builds wonders: very rarely
trains units: often
aggression level: high
espionage level: intensive
tech trading: averse, 40%

relation factor: 0
peace probability (%): 20/70/100/100
attack courage: very high
will raze city: often
refuses to talk delay: long
warmonger respect: 2

favors: culture, military
builds wonders: often
trains units: moderate
aggression level: high
espionage level: very high
tech trading: willing, 20%

relation factor: 2
peace probability (%): 0/20/80/100
attack courage: high
will raze city: never
refuses to talk delay: moderate
warmonger respect: 2

* All data based on XML code;

build wonders refers to World Wonders (scale: extreme, very often, often, sometimes, rarely, very rarely, never);

trains units refers to military unit training probability at peace (scale: extreme, very often, often, moderate, sometimes, rarely);

aggression level refers to war planning probability (scale: very high, high, medium, low, quite low, very low);

espionage level refers to espionage activity (scale: extreme, very high, high, intensive, normal, medium, moderate, low, very low, minimal);

tech trading refers to technology trading behaviour (scale: averse – requires higher AI attitude, averse, moderate, willing, most willing), number is the percentage of rival civs who must know a technology before the leader is willing to trade it away. (average);

relation factor (scale: 0–10, leaders with similar value are more likely to get along with each other, with very different value are more likely to hate each other);

peace probability (percentages are for Annoyed / Cautious / Pleased / Friendly relations. Each round, every AI will run a Declaration of War check against every other civilization. This check involves an evaluation of relative military strengths, defensive pacts, logistical considerations (shared borders, ocean crossings), existing conflicts, etc. The Peace Probability percentages above indicate the likelihood that an AI will ignore a decision to declare war due to diplomatic factors. Note: While a decision to go to war is immediate, the actual declaration may take a dozen turns or more);

[thanks for the explanation to ori, CFC]



Wealth

(commerce, gold and maintenance)

Resources and Improvements

- **Gold** +1 commerce, with **Mine** extra +6 commerce
- **Gems** +1 commerce, with **Mine** extra +5 commerce
- **Incense** +1 commerce, with **Plantation** extra +5 commerce
- **Silver** +1 commerce, with **Mine** extra +4 commerce
- **Dye** +1 commerce, with **Plantation** extra +4 commerce
- **Silk** +1 commerce, with **Plantation** extra +3 commerce
- **Fur** +1 commerce, with **Camp** extra +3 commerce
- **Spices** +1 commerce, with **Plantation** extra +2 commerce
- **Wine** +1 commerce, with **Winery** extra +2 commerce
- **Uranium** with **Mine** +3 commerce
- **Sugar** +1 commerce, with **Plantation** extra +1 commerce
- **Marble** with **Quarry** +2 commerce
- **Horse, Sheep** each with **Pasture** +1 commerce
- **Oil** with **Well / Offshore Platform** +1 commerce
- **Ivory** with **Camp** +1 commerce
- **Whale** with **Whaling Boat** +1 commerce
- **Aluminum** with **Mine** +1 commerce
- **Cottage, Hamlet, Village, Town** +1, +2, +3, +4 commerce
- **Windmill** +1 commerce

Buildings

- **Bank** +50% gold
- **Stock Exchange*** +65% gold
- **Grocer / Apothecary*, Market / Forum*** each +25% gold
- **Mall*** +20% gold
- **Mint*** +10% gold
- **Feitoria*** water tiles +1 commerce
- **Courthouse / Sacrificial Altar* / Ziggurat*** –50% maintenance
- **Rathaus*** –75% maintenance
- **Ikhand*** –20% maintenance

Wonders

- **Colossus (until Astronomy)** all cities water tiles +1 commerce
- **Wall Street** +100% gold
- **Spiral Minaret (until Computers)** each **State Religion** building +2 gold
- all **Corporation HQs** each city with corp. branch office +4 gold
- all **Religion Shrines** each city with **State Religion** +1 gold
- **Forbidden Palace, Versailles** reduces maintenance in nearby cities

- **Kremlin (until Fiber Optics)** –33% hurry production cost
- **Mausoleum of Maussollos** +50% Golden Age length
- **Taj Mahal** starts Golden Age

Corporations

- **Civilized Jewelers Inc** every **Gems, Gold, Silver** +1 gold

Technologies

- **Electricity** **Windmill** +1 commerce
Watermill +2 commerce
Village, Town +1 commerce
- **Printing Press** enables gold trade via diplomacy
- **Currency** can build **Wealth**

- **Sailing** enables trade on coast and rivers
- **Astronomy** enables trade on Ocean

Civics

- **Free Speech** **Town** +2 commerce
- **Environmentalism** **Windmill, Forest Preserve** +2 commerce
also causes +25% **Corporations** maintenance cost
- **Bureaucracy** the Capital +50% gold
- **Emancipation** **Cottage, Hamlet, Village** +100% growth
- **State Property** no maintenance cost from distance to **Palace**
- **Vassalage** increases the number of units not requiring support costs
- **Free Market** –25% **Corporations** maintenance cost

Leader traits

- Financial trait all plots with at least 2 commerce +1 commerce
- Organized trait –50% **Civic upkeep**

Food and Growth



Resources and Improvements

- **Pig** +1 food, with **Pasture** extra +3 food
- **Fish** +1 food, with **Fishing Boat** extra +3 food
- **Clam, Crab** each +1 food, with **Fishing Boat** extra +2 food
- **Sheep** +1 food, with **Pasture** extra +2 food
- **Banana** +1 food, with **Plantation** extra +2 food
- **Corn, Wheat** each +1 food, with **Farm** extra +2 food
- **Rice** +1 food, with **Farm** extra +1 food
- **Deer** +1 food, with **Camp** extra +2 food
- **Whale** +1 food
- **Wine** with **Winery** +1 food
- **Farm** without resources +1 food, with irrigation extra +1 food
- **Windmill** +1 food

Buildings

- **Lighthouse / Trading Post*** on every water tile +1 food
- **Supermarket / Mall*** per turn +1 food
- **Baray*** per turn +1 food
- **Granary / Terrace*** doubles city growth rate

Wonders

- **Hanging Gardens** all cities +1 population

Corporations

- **Cereal Mills** every **Corn, Rice, Wheat** +0.75 food
- **Sid's Sushi Co** every **Clam, Crab, Fish, Rice** +0.5 food

Technologies

- **Biology** can build **Farm** without irrigation, **Farm** +1 food
- **Civil Service** **Farms** spread irrigation

Civics

- **State Property** **Workshop, Watermill** +1 food



Production

Resources and Improvements

- **Aluminum, Coal, Copper, Iron** each +1 hammer with **Mine** extra +3 hammers
- **Oil** +1 hammer with **Well / Offshore Platform** extra +2 hammers
- **Horse** +1 hammer, with **Pasture** extra +2 hammers
- **Stone** +1 hammer, with **Quarry** extra +2 hammers
- **Marble** +1 hammer, with **Quarry** extra +1 hammer
- **Ivory** +1 hammer, with **Camp** extra +1 hammer
- **Whale** with **Whaling Boat** +2 hammers
- **Cow** with **Pasture** +2 hammers
- **Gems, Gold, Silver** with **Mine** +1 hammer
- **Mine** without resources +2 hammers
- **Lumbermill, Watermill, Workshop** each +1 hammer
- **Lumbermill, Mine, Quarry** with **Railroad** extra +1 hammer

Buildings

- **Forge / Mint*** +25% hammers
- **Factory / Assembly Plant*** +25% hammers with **Power** +50% hammers
- **Coal Plant / Hydro Plant / Nuclear Plant** provides **Power**
- **Shale Plant*** provides **Power**, +10% hammers
- **Levee / Dike*** river tiles +1 hammer
- **Dike*** unique bonus: also water tiles +1 hammer
- **Drydock** +50% **Water Units** production
- **Laboratory / Research Institute*** +50% spaceship production

Wonders

- **Ironworks** with **Coal** +50% hammers with **Iron** +50% hammers
- **Three Gorges Dam** provides **Power** for all cities on continent
- **Angkor Wat (until Computers)** all cities every **Priest** +1 hammer
- **Moai Statues** water tiles +1 hammer
- **Heroic Epic** +100% military unit production
- **Space Elevator** +50% spaceship production
- **Eiffel Tower** all cities free **Broadcast Tower**
- **Stonehenge (until Astronomy)** all cities free **Monument**
- **Mausoleum of Maussollos** +50% Golden Age length
- **Taj Mahal** starts Golden Age

Corporations

- **Mining Inc** every **Copper, Coal, Iron, Gold, Silver** +1 hammer
- **Creative Constructions** every **Aluminum, Copper, Iron, Marble, Stone** +0.5 hammer

Technologies

- **Mathematics** Forest chops yield +50% hammers
- **Chemistry, Guilds** each tech **Workshop** +1 hammer
- **Replaceable Parts** **Windmill, Watermill** +1 hammer
- **Bronze Working** enables Forest chopping

Civics

- **State Property** all cities +10% hammers
- **Bureaucracy** the Capital +50% hammers
- **Caste System** **Workshop** +1 hammer

- **Universal Suffrage** **Town** +1 hammer can spend gold to finish production
- **Organized Religion** all cities with **State Religion** +25% building production
- **Police State** +25% military unit production
- **Slavery** can sacrifice population to finish production

Leader traits

- **Aggressive trait** +100% **Barracks** and **Drydock** production
- **Creative trait** +100% **Library, Theatre**, and **Colosseum** production
- **Expansive trait** +100% **Granary** and **Harbor** production
- **Imperialistic trait** +25% **Worker** production (hammers only)
- **Industrious trait** +50% **Settler** production (hammers only)
- **Organized trait** +100% **Forge** production +50% **Wonder** production
- **Philosophical trait** +100% **Courthouse, Factory**, and **Lighthouse** production
- **Protective trait** +100% **University** production
- **Spiritual trait** +100% **Walls and Castle** production +100% **Temple** production +100% **Cristo Redentor** production

Science



Buildings

- **Academy** +50% science
- **Laboratory / Research Institute*, Library / Madrasa*, Observatory / Salon*, University** each +25% science
- **Seowon*** +35% science
- **Monasteries (until Scientific Method)** +10% science

Wonders

- **Internet** grants all techs possessed by 2+ known civs
- **Oxford University** +100% science
- **University of Sankore (until Computers)** all State Religion buildings per turn +2 beakers

Corporations

- **Oracle** 1 free tech
- **Aluminium Co** every consumed **Coal** per turn +3 beakers
- **Standard Ethanol** every consumed **Corn, Rice, Sugar** per turn +2 beakers

Technologies

- **Alphabet** enables technology trading can build Research
- **Liberalism** 1 free technology for first to discover

Civics

- **Free Religion** all cities +10% science
- **Representation** all cities per **Specialist** +3 beakers

Diplomatic attitudes**

base: 0, share war: +1 (max. +4)
favourite civic: +1 (max. +2)
same religion: +1 (max. +4)
different religion: -1
close cultural borders: max. -4
worst/better rank difference: -2/0

base: 1, share war: +1 (max. +2)
favourite civic: +1 (max. +4)
same religion: +1 (max. +7)
different religion: 0
close cultural borders: max. -2
worst/better rank difference: 0/3

base: 0, share war: +1 (max. +3)
favourite civic: +1 (max. +4)
same religion: +1 (max. +3)
different religion: 0
close cultural borders: max. -4
worst/better rank difference: -1/+1

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +2)
same religion: +1 (max. +3)
different religion: 0
close cultural borders: max. -4
worst/better rank difference: -1/0

base: 0, share war: +1 (max. +5)
favourite civic: +1 (max. +5)
same religion: +1 (max. +3)
different religion: -1
close cultural borders: max. -3
worst/better rank difference: -1/0

base: -1, share war: +1 (max. +4)
favourite civic: +1 (max. +3)
same religion: +1 (max. +6)
different religion: -2
close cultural borders: max. -2
worst/better rank difference: -2/0

base: 1, share war: +1 (max. +2)
favourite civic: +1 (max. +3)
same religion: +1 (max. +5)
different religion: -2
close cultural borders: max. -4
worst/better rank difference: -2/0

Diplomatic relationship at or below which trades will be refused***

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: pleased
open borders: annoyed

technology: annoyed
strategic bonus: annoyed
happiness bonus: furious
health bonus: furious
maps: annoyed
open borders: furious

technology: annoyed
strategic bonus: annoyed
happiness bonus: furious
health bonus: furious
maps: annoyed
open borders: furious

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: cautious
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: cautious
open borders: annoyed

technology: none
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: pleased
open borders: furious

declare war: annoyed, declare war on X: pleased
stop trading: cautious, stop trading with X: cautious
adopt civic: pleased, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: cautious
stop trading: pleased, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: cautious

declare war: pleased, declare war on X: cautious
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: pleased
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: pleased, declare war on X: cautious
stop trading: pleased, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: cautious
permanent alliance: pleased
vassal state: pleased

declare war: annoyed, declare war on X: cautious
stop trading: annoyed, stop trading with X: cautious
adopt civic: cautious, convert religion: pleased
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: pleased, declare war on X: friendly
stop trading: annoyed, stop trading with X: annoyed
adopt civic: annoyed, convert religion: cautious
defensive pact: cautious
permanent alliance: pleased
vassal state: annoyed

attack courage refers to AI combat odds (extreme - more AI attacks at lower combat odds, very high, high, normal);
razing city probability (scale: never - 0%, almost never - 5%, very rarely - 10%, rarely - 20%, sometimes - 25%, often - 50%, very often - 75%);
refuses to talk delay (scale: short, moderate, medium, long, very long);
warmonger respect refers to a bonus on relations between two leaders - the smaller of both values is the modifier (scale: 0-2).

** Based on XML code; represents the diplomatic consequences of your religion and civics choices, as well as random events.

base - attitude at first contact, modified by Difficulty Level (see: page 74);

different religion - there are no limits for negative attitudes, in game time could be more than values given;

other considerations (the same for all leaders): open borders, bonus trade, defensive pact: +2 each; lost war: -1

*** Based on XML code (scale: friendly, pleased, cautious, annoyed, furious).

Also (for all leaders) **demand tribute** or **give help** at or below cautious will be refused.

Alexander

Asoka

Augustus Caesar

Bismarck

Boudica

Brennus

Catherine

Leaders, Traits, and Favourites



Charlemagne
Holy Roman Empire
Imperialistic, Protective
fav. civic: Vassalage
fav. religion: Christianity



Churchill
English Empire
Charismatic, Protective
fav. civic: Nationhood
fav. religion: Christianity



Cyrus
Persian Empire
Charismatic, Imperialistic
fav. civic: Vassalage
fav. religion: none



Darius I
Persian Empire
Organized, Financial
fav. civic: Free Religion
fav. religion: none



De Gaulle
French Empire
Industrious, Charismatic
fav. civic: Nationhood
fav. religion: Christianity



Elizabeth
English Empire
Philosophical, Financial
fav. civic: Free Religion
fav. religion: Christianity



Frederick
German Empire
Philosophical, Organized
fav. civic: Universal Suffrage
fav. religion: Christianity



Gandhi
Indian Empire
Spiritual, Philosophical
fav. civic: Universal Suffrage
fav. religion: Hinduism



Genghis Khan
Mongolian Empire
Aggressive, Imperialistic
fav. civic: Police State
fav. religion: none

AI behaviour*

favours: military, religion
builds wonders: rarely
trains units: often
aggression level: high
espionage level: normal
tech trading: willing, 30%

favours: military, gold
builds wonders: very rarely
trains units: moderate
aggression level: medium
espionage level: high
tech trading: willing, 30%

favours: military, growth
builds wonders: very often
trains units: often
aggression level: high
espionage level: normal
tech trading: moderate, 30%

favours: gold, growth
builds wonders: very often
trains units: often
aggression level: medium
espionage level: normal
tech trading: moderate, 30%

favours: production, growth
builds wonders: very rarely
trains units: moderate
aggression level: high
espionage level: intensive
tech trading: moderate, 40%

favours: gold, culture
builds wonders: sometimes
trains units: sometimes
aggression level: quite low
espionage level: intensive
tech trading: willing, 40%

favours: production
builds wonders: sometimes
trains units: sometimes
aggression level: medium
espionage level: medium
tech trading: moderate, 30%

favours: culture
builds wonders: very rarely
trains units: rarely
aggression level: very low
espionage level: minimal
tech trading: willing, 20%

favours: military
builds wonders: very rarely
trains units: very often
aggression level: very high
espionage level: normal
tech trading: averse, 40%

relation factor: 6
peace probability (%): 20/60/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

relation factor: 6
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

relation factor: 3
peace probability (%): 20/70/100/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

relation factor: 0
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: short
warmonger respect: 2

relation factor: 9
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0

relation factor: 10
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0

relation factor: 0
peace probability (%): 10/50/90/100
attack courage: very high
will raze city: very often
refuses to talk delay: long
warmonger respect: 2



Health

Resources

- access to Banana, Clam, Corn, Cow, Crab, Deer, Fish, Pig, Rice, Sheep, Wheat each +1 health

Buildings

- Hospital +3 health
- Aqueduct / Baray* / Hammam* +2 health
- Garden* +2 health
- Apothecary* +2 health
- Granary / Terrace* with Corn, Rice, Wheat each +1 health
- Grocer / Apothecary* with Banana, Spices, Sugar, Wine each +1 health
- Supermarket / Mall* with Cow, Deer, Pig, Sheep each +1 health
- Harbor / Cothon* with Clam, Crab, Fish each +1 health
- Public Transportation with Oil +1 health
- with Environmentalism extra +2 health
- Recycling Center no unhealthiness from city buildings
- Airport, Drydock, Forge / Mint*, Laboratory / Research Institute* each +1 unhealthiness
- Factory / Assembly Plant* with Oil and Coal addtl. (each) +2 unhealthiness
- Coal Plant / Shale Plant* +2 unhealthiness
- Industrial Park with Oil and Coal each extra +1 unhealthiness

Wonders

- Hanging Gardens each city +1 health
- National Park removes Coal, no unhealthiness from population
- Ironworks +2 unhealthiness

Technologies

- Genetics +3 health
- Future Tech each +1 health
- Ecology can scrub Fallout
- Iron Working can remove Jungle

Civics

- Environmentalism +6 health

Leader traits

- Expansive trait +2 health

* unique building
** for standard map, number depends on map size

Happiness



Resources

- access to Dye, Fur, Gems, Gold, Hit Movies, Hit Musicals, Hit Singles, Incense, Ivory, Silk, Silver, Spices, Sugar, Whale, Wine each +1 happy
- Forest Preserve each +1 happy

Buildings

- all Temples +1 happy
- Buddhist Stupa / Christian Cathedral / Confucian Academy / Hindu Mandir / Islamic Mosque / Jewish Synagogue / Taoist Pagoda when its Religion is a State Religion +2 happy
- with Incense extra +1 happy
- Colosseum / Ball Court* / Garden* +1 happy
- per 20% culture rate extra +1 happy
- Ball Court* addtl. bonus: +2 happy
- Odeon* +2 happy
- per 20% culture rate extra +1 happy
- with Hit Singles extra +1 happy
- Theatre / Pavilion* with Dye +1 happy
- per 10% culture rate extra +1 happy
- Hippodrome* +1 happy
- per 5% culture rate extra +1 happy
- with Horse extra +1 happy
- Forge / Mint* with Gems, Gold, Silver each +1 happy
- Market / Forum* with Fur, Ivory, Silk, Whale each +1 happy
- Mall* with Hit Movies, Hit Musicals, Hit Singles each +1 happy
- Broadcast Tower with Hit Movies, Hit Musicals, Hit Singles +1 happy
- per 10% culture rate extra +1 happy
- Hammam* +2 happy
- Mausoleum* +2 happy
- Jail / Mausoleum* -25% war weariness
- Sacrificial Altar* -50% anger duration from sacrificing population

Wonders

- Globe Theatre no unhappiness
- Notre Dame all cities on that continent +2 happy
- Broadway, Hollywood, Rock 'n' Roll each +1 happy
- Mt. Rushmore all cities on that continent -25% war weariness

Technologies















- Future Tech each +1 happy

Civics

- Representation in 5 largest cities** +3 happy
- Hereditary Rule per Military Unit in city +1 happy
- Free Religion per religion in city +1 happy
- Nationhood: Barracks / Ikhandas* +2 happy
- Police State -50% war weariness

Leader traits

- Charismatic trait all cities +1 happy
- Charismatic trait: Broadcast Tower +1 happy
- Monument / Obelisk* / Stele* / Totem Pole* +1 happy

Specialists and Bonuses	Relevant Buildings
 Artist +1 beaker, +4 culture +3 Great People Birth Rate	free: Salon* (1) Theatre / Pavilion* (2), Odeon* (2), Broadcast Tower (2), Globe Theatre (3)
 Engineer +2 hammers +3 Great People Birth Rate	free: Industrial Park (1) Forge / Mint* (1), Factory (2), Assembly Plant* (4), Industrial Park (2), Ironworks (3)
 Merchant +3 gold +3 Great People Birth Rate	Grocer / Apothecary* (2), Market / Forum* (2), Wall Street (3)
 Priest +1 hammer, +1 gold +3 Great People Birth Rate	free: Temple of Artemis (1) Buddhist Stupa (2), Christian Cathedral (2), Confucian Academy (2), Hindu Mandir (2), Islamic Mosque (2), Jewish Synagogue (2), Taoist Pagoda (2), Madrasa* (2), Obelisk* (2), all Temples (1), Angkor Wat (3), all Shrines (3)
 Scientist +3 beakers +3 Great People Birth Rate	free: Research Institute* (2), Great Library (2) Library / Madrasa* (2), Observatory / Salon* (1), Laboratory / Research Institute* (1), National Park (1 per Forest Preserve), Oxford University (3)
 Spy +1 beaker, +4 espionage +3 Great People Birth Rate	Courthouse / Rathaus* / Sacrificial Altar* / Ziggurat* (1), Jail / Mausoleum* (2), Intelligence Agency (2), Security Bureau (2), Kremlin (2)
 Citizen +1 hammer <i>can be turned into non-Great Specialist</i>	—
 Great Artist +3 gold, +12 culture <i>Great Artist settled in a city</i>	free: first to discover Music (1) to increase Great Artist probability, build: Broadway, Globe Theatre, Hermitage, Heroic Epic, Hollywood, Mausoleum of Maussollos, Mt. Rushmore, National Epic, Notre Dame, Parthenon, Rock 'n' Roll, Sistine Chapel, Statue of Zeus, Taj Mahal
 Great Engineer +3 hammers, +3 beakers <i>Great Engineer settled in a city</i>	free: first to discover Fusion (1) to increase Great Engineer probability, build: Cristo Redentor, Hagia Sophia, Hanging Gardens, Ironworks, Pyramids, Three Gorges Dam
 Great Merchant +1 food, +6 gold <i>Great Merchant settled in a city</i>	free: first to discover Economics (1) to increase Great Merchant probability, build: Colossus, Eiffel Tower, Great Lighthouse, Statue of Liberty, Temple of Artemis, United Nations, Versailles, Wall Street
 Great Military Instructor +2 XP for all new military units <i>Great General settled in a city</i>	free: first to discover Fascism (1), combat victories
 Great Prophet +2 hammers, +5 gold <i>Great Prophet settled in a city</i>	to increase Great Prophet probability, build: Angkor Wat, Apostolic Palace, Chichen Itza, Moai Statues, Oracle, Shwedagon Paya, Spiral Minaret, Stonehenge
 Great Scientist +1 hammer, +6 beakers <i>Great Scientist settled in a city</i>	free: first to discover Physics (1) to increase Great Scientist probability, build: Great Library, Red Cross, Space Elevator, University of Sankore, National Park, Oxford University
 Great Spy +3 beakers, +12 espionage <i>Great Spy settled in a city</i>	free: first to discover Communism (1) to increase Great Spy probability, build: Forbidden Palace, Great Wall, Kremlin, Pentagon, Scotland Yard, West Point

unique building

Diplomatic attitudes**	Diplomatic relationship at or below which trades will be refused**	
base: 0, share war: +1 (max. +2) favourite civic: +1 (max. +4) same religion: +1 (max. +6) different religion: -2 close cultural borders: max. -3 worse/better rank difference: -1/+1	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: cautious open borders: annoyed	declare war: cautious, declare war on X: cautious stop trading: cautious, stop trading with X: annoyed adopt civic: cautious, convert religion: pleased defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +4) favourite civic: +1 (max. +5) same religion: +1 (max. +3) different religion: -1 close cultural borders: max. -2 worse/better rank difference: 0/0	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: cautious open borders: annoyed	declare war: cautious, declare war on X: cautious stop trading: cautious, stop trading with X: annoyed adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 1, share war: +1 (max. +3) favourite civic: +1 (max. +2) same religion: +1 (max. +4) different religion: 0 close cultural borders: max. -2 worse/better rank difference: 0/2	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: annoyed maps: annoyed open borders: furious	declare war: pleased, declare war on X: annoyed stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: cautious permanent alliance: pleased vassal state: pleased
base: 1, share war: +1 (max. +3) favourite civic: +1 (max. +2) same religion: +1 (max. +4) different religion: 0 close cultural borders: max. -2 worse/better rank difference: -1/+1	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: annoyed maps: annoyed open borders: furious	declare war: pleased, declare war on X: annoyed stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: cautious permanent alliance: pleased vassal state: pleased
base: -1, share war: +1 (max. +6) favourite civic: +1 (max. +4) same religion: +1 (max. +3) different religion: 0 close cultural borders: max. -2 worse/better rank difference: -2/+2	technology: annoyed strategic bonus: annoyed happiness bonus: annoyed health bonus: annoyed maps: annoyed open borders: annoyed	declare war: cautious, declare war on X: pleased stop trading: annoyed, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: cautious permanent alliance: cautious vassal state: pleased
base: 1, share war: +1 (max. +2) favourite civic: +1 (max. +4) same religion: +1 (max. +4) different religion: 0 close cultural borders: max. -3 worse/better rank difference: 0/+1	technology: furious strategic bonus: cautious happiness bonus: annoyed health bonus: furious maps: friendly open borders: furious	declare war: pleased, declare war on X: cautious stop trading: pleased, stop trading with X: annoyed adopt civic: cautious, convert religion: annoyed defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 1, share war: +1 (max. +3) favourite civic: +1 (max. +3) same religion: +1 (max. +4) different religion: -1 close cultural borders: max. -2 worse/better rank difference: 0/+2	technology: furious strategic bonus: cautious happiness bonus: furious health bonus: annoyed maps: cautious open borders: furious	declare war: cautious, declare war on X: cautious stop trading: cautious, stop trading with X: cautious adopt civic: pleased, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: annoyed
base: 2, share war: +1 (max. +2) favourite civic: +1 (max. +6) same religion: +1 (max. +4) different religion: -1 close cultural borders: max. -2 worse/better rank difference: 0/+1	technology: none strategic bonus: annoyed happiness bonus: none health bonus: none maps: none open borders: none	declare war: pleased, declare war on X: annoyed stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: annoyed defensive pact: pleased permanent alliance: pleased vassal state: annoyed
base: -1, share war: +1 (max. +4) favourite civic: +1 (max. +3) same religion: +1 (max. +4) different religion: 0 close cultural borders: max. -4 worse/better rank difference: -1/+2	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: annoyed maps: pleased open borders: annoyed	declare war: annoyed, declare war on X: pleased stop trading: annoyed, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased

Charlemagne

Churchill

Cyrus

Darius I

De Gaulle

Elizabeth

Frederick

Gandhi

Genghis Khan

Leaders, Traits, and Favourites

**Gilgamesh***Sumerian Empire*

Protective, Creative
fav. civic: Hereditary Rule
fav. religion: none

**Hammurabi***Babylonian Empire*

Organized, Aggressive
fav. civic: Bureaucracy
fav. religion: none

**Hannibal***Carthaginian Empire*

Financial, Charismatic
fav. civic: Free Market
fav. religion: none

**Hatshepsut***Egyptian Empire*

Spiritual, Creative
fav. civic: Organized Religion
fav. religion: none

**Huayna Capac***Incan Empire*

Industrious, Financial
fav. civic: Hereditary Rule
fav. religion: none

**Isabella***Spanish Empire*

Spiritual, Expansive
fav. civic: Theocracy
fav. religion: Christianity

**Joao II***Portuguese Empire*

Imperialistic, Expansive
fav. civic: Hereditary Rule
fav. religion: Christianity

**Julius Caesar***Roman Empire*

Organized, Imperialistic
fav. civic: Representation
fav. religion: none

**Justinian I***Byzantine Empire*

Spiritual, Imperialistic
fav. civic: Theocracy
fav. religion: Christianity

AI behaviour*

favors: military, culture
builds wonders: very often
trains units: often
aggression level: high
espionage level: normal
tech trading: willing, 20%

relation factor: 2
peace probability (%): 10/60/90/100
attack courage: very high
will raze city: never
refuses to talk delay: medium
warmonger respect: 2

favors: culture
builds wonders: very often
trains units: often
aggression level: medium
espionage level: normal
tech trading: moderate, 40%

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: long
warmonger respect: 1

favors: military, gold
builds wonders: very rarely
trains units: often
aggression level: high
espionage level: normal
tech trading: moderate, 30%

relation factor: 2
peace probability (%): 20/70/100/100
attack courage: very high
will raze city: very rarely
refuses to talk delay: medium
warmonger respect: 2

favors: culture, religion
builds wonders: very often
trains units: sometimes
aggression level: medium
espionage level: normal
tech trading: moderate, 30%

relation factor: 9
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0

favors: gold, production
builds wonders: very often
trains units: moderate
aggression level: high
espionage level: medium
tech trading: averse, 30%

relation factor: 2
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: very rarely
refuses to talk delay: medium
warmonger respect: 2

favors: religion
builds wonders: sometimes
trains units: moderate
aggression level: medium
espionage level: high
tech trading: averse, 60%

relation factor: 6
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: sometimes
refuses to talk delay: long
warmonger respect: 1

favors: science, military
builds wonders: sometimes
trains units: moderate
aggression level: medium
espionage level: intensive
tech trading: willing, 40%

relation factor: 6
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

favors: military, production
builds wonders: sometimes
trains units: often
aggression level: high
espionage level: normal
tech trading: averse, 40%

relation factor: 4
peace probability (%): 10/50/90/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

favors: religion, military
builds wonders: often
trains units: very often
aggression level: high
espionage level: intensive
tech trading: willing, 30%

relation factor: 4
peace probability (%): 30/80/100/100
attack courage: high
will raze city: never
refuses to talk delay: long
warmonger respect: 1

Civics

Upkeep Effects

Who likes it?

**Caste System***req. Code of Laws*

medium

- unlimited **Artists, Scientists, and Merchants**
- +1 hammer from **Workshop**

Wang Kon

**Emancipation***req. Democracy*

low

- +100% growth for **Cottage, Village, and Hamlet**
- unhappiness penalty for civilizations without Emancipation

Lincoln

**Decentralisation**

low

—

—

**Mercantilism***req. Banking*

medium

- 1 free **Specialist** per city
- no foreign Trade Routes
- foreign **Corporations** have no effect

Roosevelt,
Tokugawa**Free Market***req. Economy*

medium

- -25% maintenance cost for **Corporations**
- +1 Trade Route per city

Hannibal,
Mansa Musa**State Property***req. Communism*

low

- no maintenance cost from distance to **Palace**
- **Corporations** have no effect
- +10% hammers in all cities
- +1 food from **Workshop** and **Watermill**

Mao Zedong,
Stalin**Environmentalism***req. Medicine*

medium

- +25% maintenance cost for **Corporations**
- +6 health in all cities
- +2 commerce from **Windmill** and **Forest Preserve**
- +2 health from **Public Transportation**

Sitting Bull

**Paganism**

low

—

—

**Organized Religion***req. Monotheism*

high

- can build **Missionaries** without **Monastery**
- +25% building production in cities with **State Religion**

Brennus, Hatshepsut,
Ramesses II,
Suryavarma II**Theocracy***req. Theology*

medium

- +2 XP for all new units in cities with **State Religion**
- no spread of non-State Religions

Isabella, Justinian I,
Saladin, Zara Yaqob**Pacifism***req. Philosophy*

none

- +100% Great People Birth Rate in cities with **State Religion**
- +1 commerce support cost per military unit

—














**Free Religion***req. Liberalism*

low

- no State Religion
- +1 happy per Non-State Religion in city
- +10% science in all cities

Asoka, Darius I, Elizabeth,
Willem van Oranje

* for Small and Standard map, number depends on map size (see: page 75, "Base features" column – target cities)

Civics	Upkeep	Effects	Who likes it?
 Despotism <i>req. Monarchy</i>	low	—	—
 Hereditary Rule <i>req. Monarchy</i>	low	• +1 happy per military unit stationed in a city	Catherine, Gilgamesh, Huayna Capac, Joao II, Louis XIV, Pacal II, Ragnar, Suleiman
 Representation <i>req. Constitution</i>	medium	• +3 science per Specialist • +3 happy in 5 largest cities*	Augustus Caesar, Julius Caesar, Napoleon, Pericles, Victoria
 Police State <i>req. Fascism</i>	high	• +25% military unit production • -50% war weariness	Genghis Khan, Montezuma, Shaka
 Universal Suffrage <i>req. Democracy</i>	medium	• +1 hammer from Town • can spend gold to finish production in a city	Boudica, Frederick, Gandhi
 Barbarism	low	—	—
 Vassalage <i>req. Feudalism</i>	high	• +2 XP for all new units • increases the number of units not requiring support costs (number depends on map size)	Alexander, Charlemagne, Cyrus, Mehmed II
 Bureaucracy <i>req. Civil Service</i>	high	• Capital city produces +50% hammers and gold	Hammurabi, Kublai Khan, Peter, Qin Shi Huang
 Nationhood <i>req. Nationalism</i>	none	• can draft 3 units (1 per city) per turn • +25% espionage in all cities • +2 happy from Barracks	Bismarck, Churchill, De Gaulle
 Free Speech <i>req. Liberalism</i>	low	• +100% culture in all cities • +2 commerce from Town	Washington
 Tribalism	low	—	—
 Slavery <i>req. Bronze Working</i>	medium	• can sacrifice population to finish production in a city (causes unhappiness)	—
 Serfdom <i>req. Feudalism</i>	low	• Workers build Improvements 50% faster	—

Government Civics

Legal Civics

Labor Civics

Diplomatic attitudes**	Diplomatic relationship at or below which trades will be refused**	
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +4) different religion: -1 close cultural borders: max. -3 worst/better rank difference: -2/0	technology: furious strategic bonus: cautious happiness bonus: annoyed health bonus: annoyed maps: annoyed open borders: annoyed	declare war: pleased, declare war on X: cautious stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +5) different religion: -1 close cultural borders: max. -2 worst/better rank difference: 0/+1	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: annoyed maps: annoyed open borders: annoyed	declare war: cautious, declare war on X: annoyed stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +2) same religion: +1 (max. +4) different religion: -1 close cultural borders: max. -3 worst/better rank difference: -1/0	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: furious maps: annoyed open borders: annoyed	declare war: cautious, declare war on X: cautious stop trading: cautious, stop trading with X: annoyed adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 1, share war: +1 (max. +3) favourite civic: +1 (max. +2) same religion: +1 (max. +5) different religion: -2 close cultural borders: max. -2 worst/better rank difference: -1/+2	technology: furious strategic bonus: cautious happiness bonus: furious health bonus: furious maps: furious open borders: furious	declare war: cautious, declare war on X: cautious stop trading: cautious, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +5) different religion: -2 close cultural borders: max. -3 worst/better rank difference: -1/+1	technology: annoyed strategic bonus: cautious happiness bonus: furious health bonus: furious maps: cautious open borders: annoyed	declare war: pleased, declare war on X: cautious stop trading: cautious, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: -1, share war: +1 (max. +2) favourite civic: +1 (max. +3) same religion: +1 (max. +6) different religion: -2 close cultural borders: max. -3 worst/better rank difference: -1/+1	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: annoyed maps: pleased open borders: annoyed	declare war: cautious, declare war on X: pleased stop trading: cautious, stop trading with X: cautious adopt civic: cautious, convert religion: pleased defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +2) favourite civic: +1 (max. +3) same religion: +1 (max. +3) different religion: -1 close cultural borders: max. -2 worst/better rank difference: 0/+2	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: annoyed maps: pleased open borders: annoyed	declare war: cautious, declare war on X: annoyed stop trading: pleased, stop trading with X: annoyed adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +3) same religion: +1 (max. +3) different religion: -1 close cultural borders: max. -4 worst/better rank difference: -1/0	technology: annoyed strategic bonus: cautious happiness bonus: furious health bonus: annoyed maps: pleased open borders: annoyed	declare war: cautious, declare war on X: pleased stop trading: cautious, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 1, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +6) different religion: -2 close cultural borders: max. -2 worst/better rank difference: -2/0	technology: furious strategic bonus: cautious happiness bonus: furious health bonus: furious maps: annoyed open borders: furious	declare war: pleased, declare war on X: cautious stop trading: cautious, stop trading with X: annoyed adopt civic: cautious, convert religion: friendly defensive pact: pleased permanent alliance: pleased vassal state: pleased

Gilgamesh

Hammurabi

Hannibal

Hatshepsut

Huayna Capac

Isabella

Joao II

Julius Caesar

Justinian I

Leaders, Traits, and Favourites



Kublai Khan
Mongolian Empire
Aggressive, Creative
fav. civic: Bureaucracy
fav. religion: Buddhism

AI behaviour*

favours: military, culture
builds wonders: often
trains units: moderate
aggression level: high
espionage level: normal
tech trading: moderate, 30%

relation factor: 1
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: sometimes
refuses to talk delay: medium
warmonger respect: 2



Lincoln
American Empire
Philosophical, Charismatic
fav. civic: Emancipation
fav. religion: Christianity

favours: science, growth
builds wonders: often
trains units: moderate
aggression level: quite low
espionage level: intensive
tech trading: moderate, 30%

relation factor: 9
peace probability (%): 40/80/100/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0



Louis XIV
French Empire
Industrious, Creative
fav. civic: Hereditary Rule
fav. religion: Christianity

favours: culture, military
builds wonders: extremely
trains units: often
aggression level: medium
espionage level: high
tech trading: averse, 30%

relation factor: 1
peace probability (%): 0/20/80/100
attack courage: high
will raze city: never
refuses to talk delay: moderate
warmonger respect: 2



Mansa Musa
Malinese Empire
Spiritual, Financial
fav. civic: Free Market
fav. religion: Islam

favours: gold, religion
builds wonders: sometimes
trains units: moderate
aggression level: very low
espionage level: very low
tech trading: most willing, 0%

relation factor: 9
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: never
refuses to talk delay: moderate
warmonger respect: 0



Mao Zedong
Chinese Empire
Expansive, Protective
fav. civic: State Property
fav. religion: none

favours: growth, production
builds wonders: very rarely
trains units: moderate
aggression level: medium
espionage level: very high
tech trading: averse, 50%

relation factor: 1
peace probability (%): 0/30/80/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 2



Mehmed II
Ottoman Empire
Expansive, Organized
fav. civic: Vassalage
fav. religion: Islam

favours: military, culture
builds wonders: sometimes
trains units: extreme
aggression level: high
espionage level: intensive
tech trading: averse, 40%

relation factor: 2
peace probability (%): 20/70/100/100
attack courage: high
will raze city: sometimes
refuses to talk delay: medium
warmonger respect: 1



Montezuma
Aztec Empire
Aggressive, Spiritual
fav. civic: Police State
fav. religion: none

favours: military, religion
builds wonders: never
trains units: very often
aggression level: very high
espionage level: moderate
tech trading: averse, 50%

relation factor: 0
peace probability (%): 0/30/80/100
attack courage: very high
will raze city: often
refuses to talk delay: long
warmonger respect: 2



Napoleon
French Empire
Organized, Charismatic
fav. civic: Representation
fav. religion: Christianity

favours: military, gold
builds wonders: very rarely
trains units: extreme
aggression level: high
espionage level: normal
tech trading: moderate, 60%

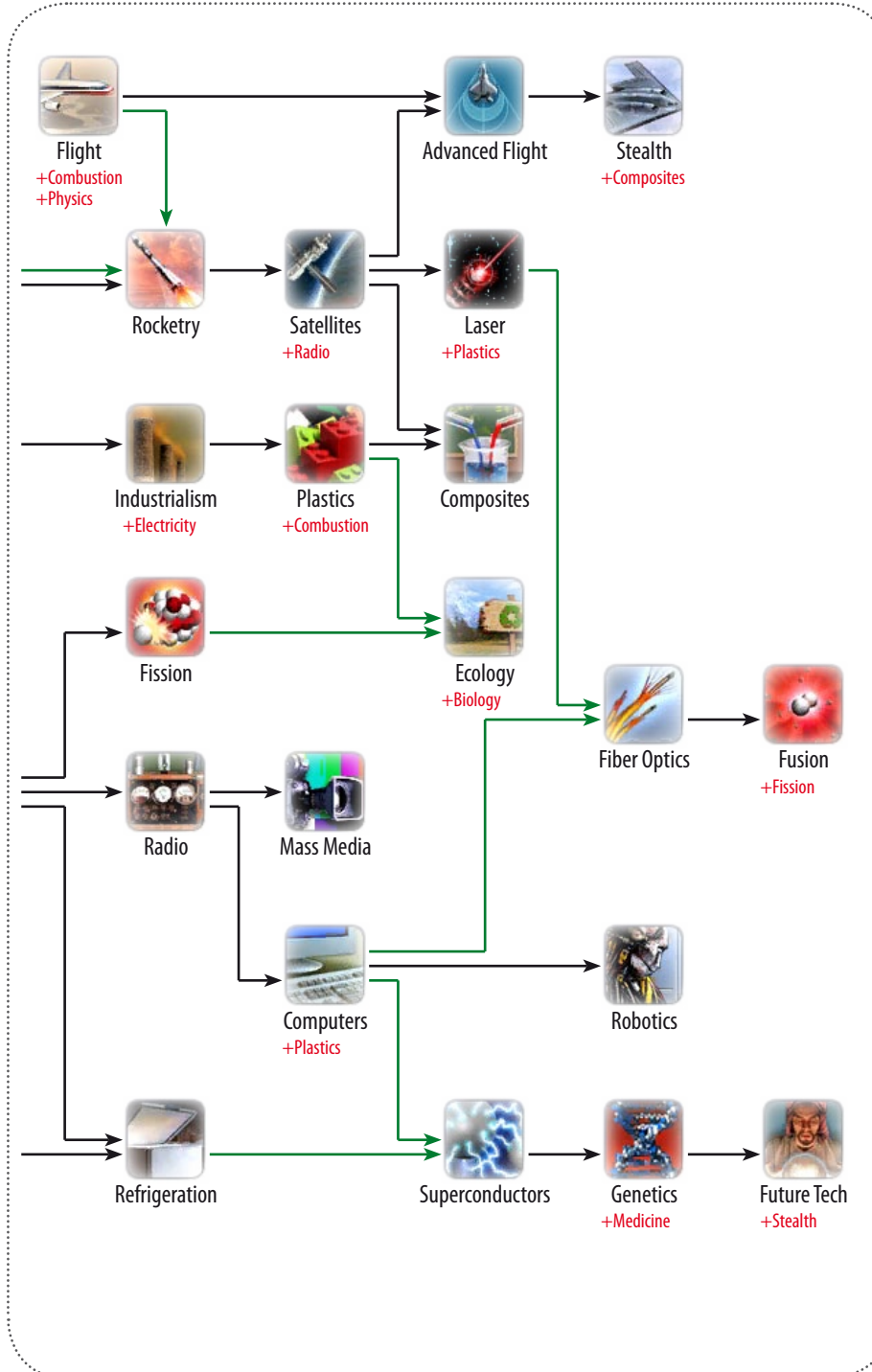
relation factor: 0
peace probability (%): 10/50/90/100
attack courage: extreme
will raze city: never
refuses to talk delay: long
warmonger respect: 2

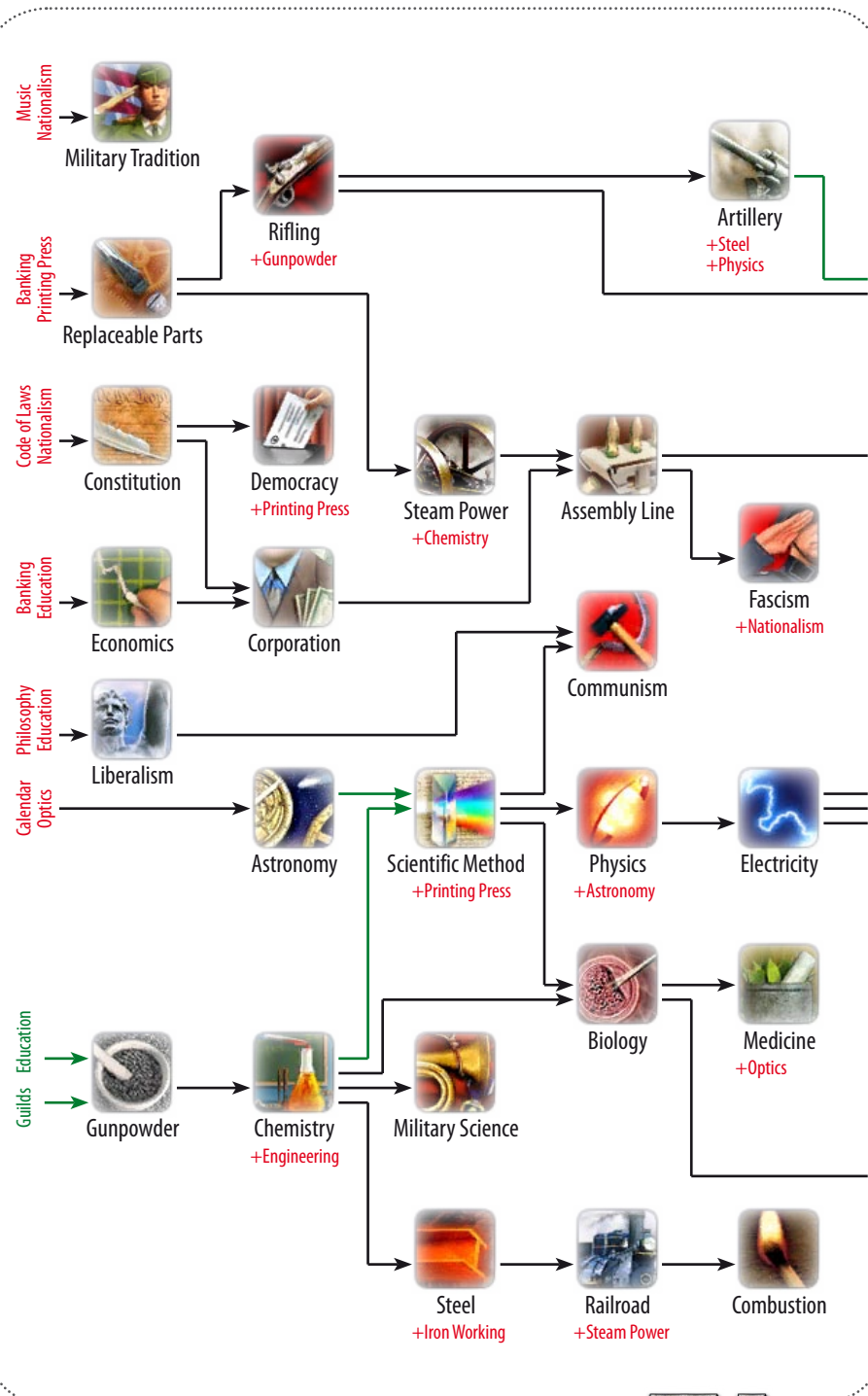


Pacal II
Maya Empire
Financial, Expansive
fav. civic: Hereditary Rule
fav. religion: none

favours: culture, growth
builds wonders: very often
trains units: moderate
aggression level: quite low
espionage level: normal
tech trading: averse, 50%

relation factor: 2
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: very rarely
refuses to talk delay: moderate
warmonger respect: 0





Diplomatic attitudes**

base: 0, share war: +1 (max. +3)
favourite civic: +1 (max. +4)
same religion: +1 (max. +4)
different religion: 0
close cultural borders: max. -3
worse/better rank difference: 0/+3

base: 1, share war: +1 (max. +4)
favourite civic: +1 (max. +4)
same religion: +1 (max. +2)
different religion: 0
close cultural borders: max. -2
worse/better rank difference: -1/+1

base: 0, share war: +1 (max. +2)
favourite civic: +1 (max. +3)
same religion: +1 (max. +4)
different religion: -2
close cultural borders: max. -4
worse/better rank difference: -2/+1

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +4)
same religion: +1 (max. +6)
different religion: -2
close cultural borders: max. -2
worse/better rank difference: 0/+4

base: 0, share war: +1 (max. +3)
favourite civic: +1 (max. +6)
same religion: +1 (max. +2)
different religion: 0
close cultural borders: max. -2
worse/better rank difference: 0/0

base: -1, share war: +1 (max. +4)
favourite civic: +1 (max. +4)
same religion: +1 (max. +4)
different religion: -2
close cultural borders: max. -2
worse/better rank difference: 0/+3

base: -1, share war: +1 (max. +4)
favourite civic: +1 (max. +2)
same religion: +1 (max. +2)
different religion: -2
close cultural borders: max. -4
worse/better rank difference: -3/0

base: -1, share war: +1 (max. +4)
favourite civic: +1 (max. +5)
same religion: +1 (max. +4)
different religion: 0
close cultural borders: max. -3
worse/better rank difference: -1/+1

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +5)
same religion: +1 (max. +5)
different religion: -2
close cultural borders: max. -2
worse/better rank difference: -1/+2

Diplomatic relationship at or below which trades will be refused***

technology: furious
strategic bonus: annoyed
happiness bonus: annoyed
health bonus: annoyed
maps: cautious
open borders: annoyed

technology: furious
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: annoyed
open borders: annoyed

technology: furious
strategic bonus: annoyed
happiness bonus: none
health bonus: none
maps: annoyed
open borders: none

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: pleased
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: pleased
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: furious
health bonus: furious
maps: cautious
open borders: annoyed

declare war: cautious, declare war on X: pleased
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: cautious

declare war: pleased, declare war on X: annoyed
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: pleased
stop trading: cautious, stop trading with X: cautious
adopt civic: pleased, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: annoyed

declare war: annoyed, declare war on X: pleased
stop trading: pleased, stop trading with X: furious
adopt civic: annoyed, convert religion: annoyed
defensive pact: pleased
permanent alliance: pleased
vassal state: annoyed

declare war: cautious, declare war on X: pleased
stop trading: annoyed, stop trading with X: cautious
adopt civic: pleased, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: annoyed, declare war on X: cautious
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: annoyed, declare war on X: pleased
stop trading: annoyed, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: pleased
stop trading: annoyed, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: pleased, declare war on X: pleased
stop trading: pleased, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

Kublai Khan

Lincoln

Louis XIV

Mansa Musa

Mao Zedong

Mehmed II

Montezuma

Napoleon

Pacal II

Leaders, Traits, and Favourites



Pericles

Greek Empire

Philosophical, Creative
fav. civic: Representation
fav. religion: none



Peter

Russian Empire

Philosophical, Expansive
fav. civic: Bureaucracy
fav. religion: Christianity



Qin Shi Huang

Chinese Empire

Industrious, Protective
fav. civic: Bureaucracy
fav. religion: Taoism



Ragnar

Viking Empire

Financial, Aggressive
fav. civic: Hereditary Rule
fav. religion: none



Ramesses II

Egyptian Empire

Spiritual, Industrious
fav. civic: Organized Religion
fav. religion: none



Roosevelt

American Empire

Industrious, Organized
fav. civic: Mercantilism
fav. religion: Christianity



Saladin

Arabian Empire

Protective, Spiritual
fav. civic: Theocracy
fav. religion: Islam



Shaka

Zulu Empire

Aggressive, Expansive
fav. civic: Police State
fav. religion: none



Sitting Bull

Native American Empire

Philosophical, Protective
fav. civic: Environmentalism
fav. religion: none

AI behaviour*

favors: production, science
builds wonders: very often
trains units: moderate
aggression level: low
espionage level: normal
tech trading: willing, 10%

relation factor: 6
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

favors: science, growth
builds wonders: often
trains units: often
aggression level: high
espionage level: high
tech trading: willing, 10%

relation factor: 1
peace probability (%): 10/50/90/100
attack courage: very high
will raze city: never
refuses to talk delay: medium
warmonger respect: 2

favors: production, growth
builds wonders: often
trains units: sometimes
aggression level: quite low
espionage level: medium
tech trading: averse, 30%

relation factor: 2
peace probability (%): 0/30/80/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 2

favors: military
builds wonders: very rarely
trains units: extreme
aggression level: very high
espionage level: normal
tech trading: averse, 30%

relation factor: 0
peace probability (%): 0/50/90/100
attack courage: extreme
will raze city: often
refuses to talk delay: long
warmonger respect: 2

favors: culture, production
builds wonders: extremely
trains units: sometimes
aggression level: medium
espionage level: normal
tech trading: willing, 60%

relation factor: 6
peace probability (%): 20/70/100/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 0

favors: production, gold
builds wonders: sometimes
trains units: sometimes
aggression level: quite low
espionage level: high
tech trading: willing, 30%

relation factor: 8
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: never
refuses to talk delay: long
warmonger respect: 0

favors: military, religion
builds wonders: very rarely
trains units: often
aggression level: medium
espionage level: normal
tech trading: moderate, 40%

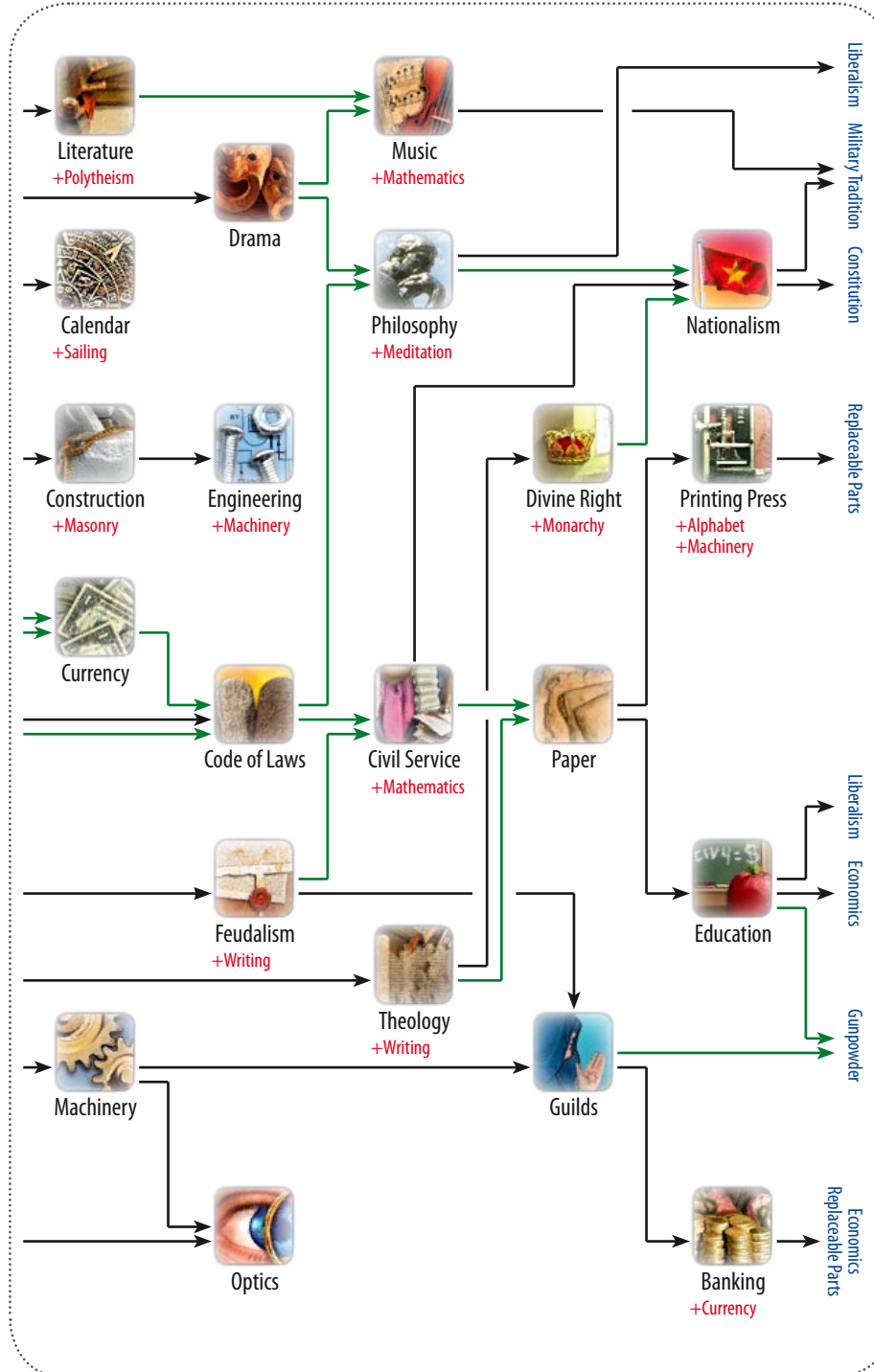
relation factor: 4
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: never
refuses to talk delay: medium
warmonger respect: 1

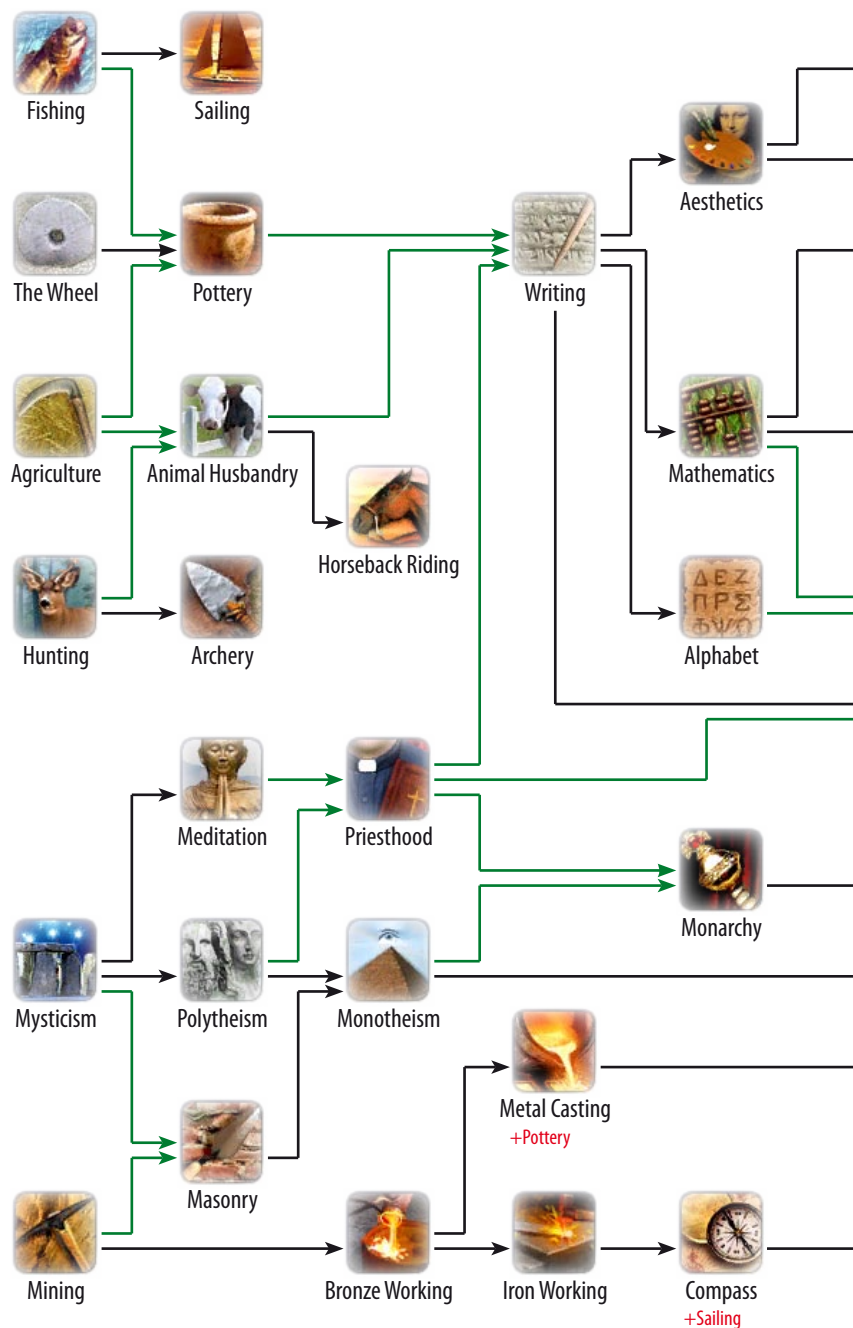
favors: military
builds wonders: very rarely
trains units: extreme
aggression level: very high
espionage level: normal
tech trading: averse, 50%

relation factor: 2
peace probability (%): 0/40/90/100
attack courage: very high
will raze city: often
refuses to talk delay: long
warmonger respect: 2

favors: military, growth
builds wonders: never
trains units: very often
aggression level: medium
espionage level: high
tech trading: averse, 80%

relation factor: 8
peace probability (%): 50/90/100/100
attack courage: very high
will raze city: rarely
refuses to talk delay: very long
warmonger respect: 0



**Diplomatic attitudes****

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +2)
same religion: +1 (max. +4)
different religion: -1
close cultural borders: max. -2
worse/better rank difference: 0/0

base: 0, share war: +1 (max. +2)
favourite civic: +1 (max. +2)
same religion: +1 (max. +4)
different religion: -1
close cultural borders: max. -3
worse/better rank difference: -2/+2

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +5)
same religion: +1 (max. +4)
different religion: -1
close cultural borders: max. -4
worse/better rank difference: -1/0

base: -1, share war: +1 (max. +3)
favourite civic: +1 (max. +3)
same religion: +1 (max. +5)
different religion: 0
close cultural borders: max. -2
worse/better rank difference: -1/+2

base: 0, share war: +1 (max. +3)
favourite civic: +1 (max. +4)
same religion: +1 (max. +6)
different religion: -1
close cultural borders: max. -2
worse/better rank difference: 0/+2

base: 1, share war: +1 (max. +3)
favourite civic: +1 (max. +5)
same religion: +1 (max. +3)
different religion: 0
close cultural borders: max. -3
worse/better rank difference: -1/+2

base: 0, share war: +1 (max. +4)
favourite civic: +1 (max. +1)
same religion: +1 (max. +5)
different religion: -2
close cultural borders: max. -3
worse/better rank difference: 0/+2

base: -1, share war: +1 (max. +4)
favourite civic: +1 (max. +2)
same religion: +1 (max. +3)
different religion: 0
close cultural borders: max. -4
worse/better rank difference: -2/0

base: 0, share war: +1 (max. +4)
favourite civic: +1 (max. +2)
same religion: +1 (max. +2)
different religion: 0
close cultural borders: max. -4
worse/better rank difference: 0/0

Diplomatic relationship at or below which trades will be refused***

technology: furious
strategic bonus: cautious
happiness bonus: annoyed
health bonus: annoyed
maps: cautious
open borders: furious

technology: furious
strategic bonus: cautious
happiness bonus: furious
health bonus: annoyed
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: furious
health bonus: furious
maps: pleased
open borders: annoyed

technology: cautious
strategic bonus: pleased
happiness bonus: pleased
health bonus: annoyed
maps: pleased
open borders: furious

technology: annoyed
strategic bonus: annoyed
happiness bonus: furious
health bonus: annoyed
maps: pleased
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: furious
health bonus: furious
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: cautious
happiness bonus: furious
health bonus: annoyed
maps: cautious
open borders: annoyed

technology: cautious
strategic bonus: cautious
happiness bonus: annoyed
health bonus: furious
maps: annoyed
open borders: annoyed

technology: annoyed
strategic bonus: annoyed
happiness bonus: furious
health bonus: furious
maps: furious
open borders: annoyed

declare war: pleased, declare war on X: annoyed
stop trading: pleased, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: annoyed, declare war on X: pleased
stop trading: cautious, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: cautious
vassal state: pleased

declare war: cautious, declare war on X: pleased
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: cautious
vassal state: pleased

declare war: annoyed, declare war on X: cautious
stop trading: annoyed, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: cautious
stop trading: cautious, stop trading with X: annoyed
adopt civic: pleased, convert religion: pleased
defensive pact: pleased
permanent alliance: cautious
vassal state: pleased

declare war: cautious, declare war on X: cautious
stop trading: pleased, stop trading with X: cautious
adopt civic: cautious, convert religion: cautious
defensive pact: cautious
permanent alliance: pleased
vassal state: pleased

declare war: cautious, declare war on X: annoyed
stop trading: pleased, stop trading with X: cautious
adopt civic: cautious, convert religion: pleased
defensive pact: cautious
permanent alliance: pleased
vassal state: cautious

declare war: annoyed, declare war on X: pleased
stop trading: annoyed, stop trading with X: cautious
adopt civic: cautious, convert religion: annoyed
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

declare war: pleased, declare war on X: annoyed
stop trading: cautious, stop trading with X: annoyed
adopt civic: cautious, convert religion: cautious
defensive pact: pleased
permanent alliance: pleased
vassal state: pleased

Pericles

Peter

Qin Shi Huang

Ragnar

Ramesses II

Roosevelt

Saladin

Shaka

Sitting Bull

Leaders, Traits, and Favourites



Stalin
Russian Empire
Industrious, Aggressive
fav. civic: State Property
fav. religion: none

AI behaviour*

favors: military, production
builds wonders: often
trains units: often
aggression level: high
espionage level: extreme
tech trading: averse, 80%

relation factor: 2
peace probability (%): 10/50/90/100
attack courage: high
will raze city: sometimes
refuses to talk delay: medium
warmonger respect: 1



Suleiman
Ottoman Empire
Imperialistic, Philosophical
fav. civic: Hereditary Rule
fav. religion: Islam

favors: culture, military
builds wonders: sometimes
trains units: often
aggression level: high
espionage level: medium
tech trading: moderate, 40%

relation factor: 4
peace probability (%): 20/70/100/100
attack courage: high
will raze city: almost never
refuses to talk delay: medium
warmonger respect: 1



Suryavarma II
Khmer Empire
Expansive, Creative
fav. civic: Organized Religion
fav. religion: Buddhism

favors: gold, culture
builds wonders: very often
trains units: often
aggression level: high
espionage level: normal
tech trading: moderate, 50%

relation factor: 1
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: sometimes
refuses to talk delay: medium
warmonger respect: 1



Tokugawa
Japanese Empire
Protective, Aggressive
fav. civic: Mercantilism
fav. religion: Buddhism

favors: science, military
builds wonders: sometimes
trains units: often
aggression level: high
espionage level: very low
tech trading: averse, 100%

relation factor: 1
peace probability (%): 10/50/90/100
attack courage: normal
will raze city: sometimes
refuses to talk delay: long
warmonger respect: 2



Victoria
English Empire
Imperialistic, Financial
fav. civic: Representation
fav. religion: Christianity

favors: gold, growth
builds wonders: often
trains units: moderate
aggression level: medium
espionage level: intensive
tech trading: moderate, 30%

relation factor: 8
peace probability (%): 0/20/80/100
attack courage: normal
will raze city: never
refuses to talk delay: long
warmonger respect: 0



Wang Kon
Korean Empire
Financial, Protective
fav. civic: Caste System
fav. religion: Confucianism

favors: gold, science
builds wonders: sometimes
trains units: moderate
aggression level: high
espionage level: intensive
tech trading: moderate, 20%

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: normal
will raze city: very rarely
refuses to talk delay: moderate
warmonger respect: 0



Washington
American Empire
Expansive, Charismatic
fav. civic: Free Speech
fav. religion: Christianity

favors: military, growth
builds wonders: sometimes
trains units: moderate
aggression level: medium
espionage level: high
tech trading: moderate, 30%

relation factor: 8
peace probability (%): 20/70/100/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 0



Willem van Oranje
Dutch Empire
Creative, Financial
fav. civic: Free Religion
fav. religion: Christianity

favors: gold, science
builds wonders: sometimes
trains units: moderate
aggression level: high
espionage level: normal
tech trading: willing, 15%

relation factor: 4
peace probability (%): 10/50/80/100
attack courage: high
will raze city: never
refuses to talk delay: medium
warmonger respect: 0



Zara Yaqob
Ethiopian Empire
Creative, Organized
fav. civic: Theocracy
fav. religion: Christianity

favors: growth, religion
builds wonders: sometimes
trains units: often
aggression level: medium
espionage level: normal
tech trading: moderate, 30%

relation factor: 6
peace probability (%): 10/50/90/100
attack courage: high
will raze city: almost never
refuses to talk delay: medium
warmonger respect: 1

Tech



Robotics
Modern Era

Beakers** 8000
Prereq. Techs Computers

Can build
Mechanized Infantry*, Missile Cruiser,
Stealth Destroyer*, Stealth Bomber*,
Space Elevator (W)*

Effects

—



Rocketry
Modern Era

Beakers** 5000
Prereq. Techs Artillery or Flight, Rifling

Can build
SAM Infantry, Attack Submarine*,
Guided Missile*, Tactical Nuke*, ICBM*,
Aluminum Co (C)*, Apollo Program (TP)

—



Sailing
Ancient Era

Beakers** 100
Prereq. Techs Fishing

Can build
Galley, Trireme*,
Lighthouse, Trading Post, Great
Lighthouse (W)*, Moai Statues (NW)

enables trade on coast
enables trade on rivers



Satellites
Modern Era

Beakers** 6000
Prereq. Techs Rocketry, Radio

Can build
Space Ship Docking Bay,
Space Elevator (W)*

reveals World Map



Scientific Method
Industrial Era

Beakers** 2400
Prereq. Techs Astronomy or Chemistry, Printing Press

Can build
Forest Preserve

reveals Oil
obsoletes Monasteries,
Great Library (W), Parthenon (W),
Temple of Artemis (W)



Stealth
Future Era

Beakers** 8000
Prereq. Techs Composites, Advanced Flight

Can build
Stealth Destroyer*, Stealth Bomber*

—



Steam Power
Industrial Era

Beakers** 3200
Prereq. Techs Chemistry, Replaceable Parts

Can build
Ironclad*,
Levee, Dike

reveals Coal
obsoletes Workers build improv. +50% faster
obsoletes Hagia Sophia (W)



Steel
Industrial Era

Beakers** 2800
Prereq. Techs Iron Working, Chemistry

Can build
Cannon, Ironclad*,
Drydock, Ironworks (NW)

—



Superconductors
Modern Era

Beakers** 6500
Prereq. Techs Refrigeration or Computers

Can build
Laboratory, Research Institute,
Space Ship Thrusters

—



Theology
Medieval Era

Beakers** 500
Prereq. Techs Writing, Monotheism

Can build
Hagia Sophia (W), Apostolic Palace (W)

enables Theocracy
first to discover founds Christianity



Wheel
Ancient Era

Beakers** 60

Can build
Road
Chariot, War Chariot, Immortal

—



Writing
Ancient Era

Beakers** 120
Prereq. Techs Animal Husbandry or Priesthood or Pottery

Can build
Library, Madrasa

enables Open Borders

W – World Wonder NW – National Wonder C – Corporation WP – World Project TP – Team Project

* other tech(s) also required

** Assumes **Duel** Map Size, **Noble** Difficulty Level, and **Normal** Game Speed. Factors for other conditions are:

– Map Size: **Tiny** ×1.10, **Small** ×1.20, **Standard** ×1.30, **Large** ×1.40, **Huge** ×1.50

– Difficulty Level: **Settler** ×0.60, **Chieftain** ×0.75, **Warlord** ×0.90, **Prince** ×1.10, **Monarch** ×1.15, **Emperor** ×1.20, **Immortal** ×1.25, **Deity** ×1.30

– Game Speed: **Quick** ×0.67, **Epic** ×1.50, **Marathon** ×3.00 (!)

Example: Wheel on Huge/Emperor/Marathon will cost 324 beakers (60×1.50×1.20×3.00) instead of 60.

REFERENCE GUIDE

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Tech	Beakers**	Prereq. Techs	Can build	Effects
 Mysticism Ancient Era	50	—	Monument, Obelisk, Stele, Totem Pole, Stonehenge (W)	—
 Nationalism Renaissance Era	1800	Divine Right or Philosophy, Civil Service	Hermitage (NW), Taj Mahal (W)	enables Nationhood
 Optics Medieval Era	600	Machinery, Compass	Caravel, Carrack, Whaling Boat	+1 sight across water
 Paper Medieval Era	600	Civil Service or Theology	University of Sankore (W)	enables Map Trading
 Philosophy Medieval Era	800	Code of Laws or Drama, Meditation	Angkor Wat (W)	enables Pacifism first to discover founds Taoism
 Physics Industrial Era	4000	Astronomy, Scientific Method	Airship	first to discover receives Great Scientist reveals Uranium
 Plastics Modern Era	7000	Combustion, Industrialism	Offshore Platform Hydro Plant, Three Gorges Dam (W), Standard Ethanol (C)*	obsoletes Fur
 Polytheism Ancient Era	100	Mysticism	Parthenon (W), Temple of Artemis (W)	first to discover founds Hinduism
 Pottery Ancient Era	80	Agriculture or Fishing, Wheel	Cottage Granary, Terrace	—
 Priesthood Ancient Era	60	Meditation or Polytheism	Buddhist Temple, Christian Temple, Confucian Temple, Hindu Temple, Islamic Temple, Jewish Temple, Taoist Temple, Ziggurat, Oracle (W)	—
 Printing Press Renaissance Era	1600	Machinery, Alphabet, Paper	—	+1 commerce from Hamlet +1 commerce from Town
 Radio Modern Era	6000	Electricity	Submarine, Attack Submarine*, Bomber*, Guided Missile* Eiffel Tower (W), Rock 'n' Roll (W), Cristo Redentor (W)	—
 Railroad Industrial Era	4500	Steam Power, Steel	Machine Gun Railroad Mining Inc (C)*	—
 Refrigeration Modern Era	4000	Biology, Electricity	Supermarket, Mall, Cereal Mills (C)*	+1 move for Water Units
 Replaceable Parts Renaissance Era	1800	Banking, Printing Press	Lumbermill	+1 hammer from Windmill +1 hammer from Watermill
 Rifling Renaissance Era	2400	Gunpowder, Replaceable Parts	Rifleman, Redcoat, Infantry*, Marine*, Navy SEAL*, Paratrooper*, Tank*, Panzer*, Mechanized Infantry*, Cavalry*, Cossack*	obsoletes Walls, Chichen Itza (W)

Diplomatic attitudes**	Diplomatic relationship at or below which trades will be refused***	
base: -1, share war: +1 (max. +3) favourite civic: +1 (max. +6) same religion: +1 (max. +2) different religion: 0 close cultural borders: max. -2 worst/better rank difference: -3/0	technology: cautious strategic bonus: cautious happiness bonus: annoyed health bonus: furious maps: pleased open borders: furious	declare war: cautious, declare war on X: pleased stop trading: annoyed, stop trading with X: cautious adopt civic: pleased, convert religion: annoyed defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +5) favourite civic: +1 (max. +3) same religion: +1 (max. +2) different religion: -1 close cultural borders: max. -2 worst/better rank difference: -1/+1	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: annoyed open borders: annoyed	declare war: annoyed, declare war on X: pleased stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: annoyed defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +5) different religion: -2 close cultural borders: max. -3 worst/better rank difference: -2/0	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: furious maps: cautious open borders: annoyed	declare war: cautious, declare war on X: pleased stop trading: pleased, stop trading with X: cautious adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: -1, share war: +1 (max. +4) favourite civic: +1 (max. +5) same religion: +1 (max. +3) different religion: -1 close cultural borders: max. -3 worst/better rank difference: 0/+1	technology: cautious strategic bonus: pleased happiness bonus: cautious health bonus: cautious maps: friendly open borders: cautious	declare war: cautious, declare war on X: pleased stop trading: annoyed, stop trading with X: pleased adopt civic: pleased, convert religion: pleased defensive pact: cautious permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +3) same religion: +1 (max. +4) different religion: 0 close cultural borders: max. -2 worst/better rank difference: -1/0	technology: annoyed strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: annoyed open borders: annoyed	declare war: cautious, declare war on X: pleased stop trading: annoyed, stop trading with X: annoyed adopt civic: pleased, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +3) different religion: -1 close cultural borders: max. -2 worst/better rank difference: 0/+3	technology: annoyed strategic bonus: cautious happiness bonus: annoyed health bonus: furious maps: annoyed open borders: annoyed	declare war: cautious, declare war on X: cautious stop trading: pleased, stop trading with X: annoyed adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: cautious
base: 0, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +5) different religion: -1 close cultural borders: max. -2 worst/better rank difference: 0/+1	technology: cautious strategic bonus: cautious happiness bonus: furious health bonus: annoyed maps: annoyed open borders: annoyed	declare war: pleased, declare war on X: cautious stop trading: cautious, stop trading with X: annoyed adopt civic: cautious, convert religion: cautious defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 0, share war: +1 (max. +4) favourite civic: +1 (max. +4) same religion: +1 (max. +1) different religion: 0 close cultural borders: max. -1 worst/better rank difference: +1/-1	technology: furious strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: furious open borders: annoyed	declare war: pleased, declare war on X: cautious stop trading: pleased, stop trading with X: furious adopt civic: cautious, convert religion: annoyed defensive pact: pleased permanent alliance: pleased vassal state: pleased
base: 2, share war: +1 (max. +3) favourite civic: +1 (max. +4) same religion: +1 (max. +7) different religion: -2 close cultural borders: max. -2 worst/better rank difference: -1/+2	technology: furious strategic bonus: annoyed happiness bonus: furious health bonus: furious maps: annoyed open borders: annoyed	declare war: annoyed, declare war on X: pleased stop trading: cautious, stop trading with X: cautious adopt civic: annoyed, convert religion: pleased defensive pact: pleased permanent alliance: pleased vassal state: cautious

Stalin

Suleiman

Suryavarman II

Tokugawa

Victoria

Wang Kon

Washington

Willem van

Zara Yaqob








Oranje













Traits and their effects		Who has it?					
Ag	Aggressive	<ul style="list-style-type: none"> free Combat I promotion for all Melee and Gunpowder Units double production speed of Barracks and Drydock 					
		Alexander	+Ph	Hammurabi	+Or	Shaka	+Ex
		Boudica	+Ch	Kublai Khan	+Cr	Stalin	+In
		Genghis Khan	+Im	Montezuma	+Sp	Tokugawa	+Pr
Ch	Charismatic	<ul style="list-style-type: none"> +1 happy in all cities -25% XP needed for unit promotions +1 happy from Monument and Broadcast Tower 					
		Boudica	+Ag	Cyrus	+Im	Lincoln	+Ph
		Brennus	+Sp	De Gaulle	+In	Napoleon	+Or
		Churchill	+Pr	Hannibal	+Fi	Washington	+Ex
Cr	Creative	<ul style="list-style-type: none"> +2 culture in all cities double production speed of Library, Theatre, and Colosseum 					
		Catherine	+Im	Kublai Khan	+Ag	Suryavarma II	+Ex
		Gilgamesh	+Pr	Louis XIV	+In	Willem van Oranje	+Fi
		Hatshepsut	+Sp	Pericles	+Ph	Zara Yaqob	+Or
Ex	Expansive	<ul style="list-style-type: none"> +2 health in all cities 25% faster production of Worker double production speed of Granary and Harbor 					
		Bismarck	+In	Mao Zedong	+Pr	Shaka	+Ag
		Isabella	+Sp	Mehmed II	+Or	Suryavarma II	+Cr
		Joao II	+Im	Pacal II	+Fi	Washington	+Ch
Fi	Financial	<ul style="list-style-type: none"> +1 commerce on tiles with at least 2 commerce 					
		Darius I	+Or	Huayna Capac	+In	Victoria	+Im
		Elizabeth	+Ph	Mansa Musa	+Sp	Wang Kon	+Pr
		Hannibal	+Ch	Pacal II	+Ex	Willem van Oranje	+Cr
Im	Imperialistic	<ul style="list-style-type: none"> +100% Great General Emergence 50% faster production of Settler 					
		Augustus Caesar	+In	Cyrus	+Ch	Justinian I	+Sp
		Catherine	+Cr	Genghis Khan	+Ag	Suleiman	+Ph
		Charlemagne	+Pr	Joao II	+Ex	Victoria	+Fi
In	Industrious	<ul style="list-style-type: none"> +50% Wonder production double production speed of Forge 					
		Augustus Caesar	+Im	Huayna Capac	+Fi	Rameses II	+Sp
		Bismarck	+Ex	Louis XIV	+Cr	Roosevelt	+Or
		De Gaulle	+Ch	Qin Shi Huang	+Pr	Stalin	+Ag
Or	Organized	<ul style="list-style-type: none"> -50% Civic upkeep double production speed of Lighthouse, Factory, and Courthouse 					
		Asoka	+Sp	Hammurabi	+Ag	Napoleon	+Ch
		Darius I	+Fi	Julius Caesar	+Im	Roosevelt	+In
		Frederick	+Ph	Mehmed II	+Ex	Zara Yaqob	+Cr
Ph	Philosophical	<ul style="list-style-type: none"> +100% Great People Birth Rate double production speed of University 					
		Alexander	+Ag	Gandhi	+Sp	Peter	+Ex
		Elizabeth	+Fi	Lincoln	+Ch	Sitting Bull	+Pr
		Frederick	+Or	Pericles	+Cr	Suleiman	+Im
Pr	Protective	<ul style="list-style-type: none"> free City Garrison I and Drill I promotions for all Archery and Gunpowder Units double production speed of Walls and Castle 					
		Churchill	+Ch	Mao Zedong	+Ex	Sitting Bull	+Ph
		Charlemagne	+Im	Qin Shi Huang	+In	Tokugawa	+Ag
		Gilgamesh	+Cr	Saladin	+Sp	Wang Kon	+Fi
Sp	Spiritual	<ul style="list-style-type: none"> no anarchy double production speed of Temple double production speed of Cristo Redentor (W) 					
		Asoka	+Or	Hatshepsut	+Cr	Montezuma	+Ag
		Brennus	+Ch	Isabella	+Ex	Rameses II	+In
		Gandhi	+Ph	Justinian I	+Im	Saladin	+Pr

W World Wonder

Tech	Beakers**	Prereq. Techs	Can build	Effects
Laser	Modern Era	7000	Plastics, Satellites	Mobile SAM , Mobile Artillery *, SDI (TP)
Liberalism	Renaissance Era	1400	Philosophy, Education	—
Literature	Classical Era	200	Polytheism, Aesthetics	Heroic Epic (NW) , National Epic (NW) , Great Library (W)
Machinery	Medieval Era	700	Metal Casting	Windmill , Watermill , Maceman *, Samurai *, Berserker *, Crossbowman *, Cho-Ko-Nu *
Masonry	Ancient Era	80	Mysticism or Mining	Quarry , Walls , Dun , Aqueduct *, Hammam *, Baray *, Pyramids (W) , Great Lighthouse (W) *, Great Wall (W)
Mass Media	Modern Era	3600	Radio	Broadcast Tower , Hollywood (W) , United Nations (W) , Civilized Jewelers Inc (C) *
Mathematics	Classical Era	250	Writing	Fort , Aqueduct *, Hammam *, Baray *, Hanging Gardens (W)
Medicine	Industrial Era	4500	Optics, Biology	Hospital , Red Cross (NW) , Sid's Sushi Co (C) *
Meditation	Ancient Era	80	Mysticism	Buddhist Monastery , Christian Monastery , Confucian Monastery , Hindu Monastery , Islamic Monastery , Jewish Monastery , Taoist Monastery
Metal Casting	Classical Era	450	Pottery, Bronze Working	Trireme *, Workshop , Forge , Mint , Colossus (W)
Military Science	Renaissance Era	2000	Chemistry	Grenadier , Ship of the Line *, Military Academy
Military Tradition	Renaissance Era	2000	Music, Nationalism	Conquistador *, Cuirassier *, Cavalry *, Cossack *, West Point (NW)
Mining	Ancient Era	50	—	Mine
Monarchy	Classical Era	300	Priesthood or Monotheism	Winery
Monotheism	Ancient Era	120	Masonry, Polytheism	—
Music	Medieval Era	600	Literature or Drama, Mathematics	Buddhist Stupa , Christian Cathedral , Confucian Academy , Hindu Mandir , Islamic Mosque , Jewish Synagogue , Taoist Pagoda , Sistine Chapel (W)


Tech	Beakers**	Prereq. Techs	Can build	Effects
 Engineering Medieval Era	1000	Machinery, Construction	Pikeman, Landsknecht, Trebuchet Castle, Citadel, Notre Dame (W)	+1 road movement
 Fascism Industrial Era	2400	Nationalism, Assembly Line	Paratrooper* Mt. Rushmore (NW)	first to discover receives Great General enables permanent alliances enables Police State
 Feudalism Medieval Era	700	Writing, Monarchy	Longbowman*	enables vassal states enables Vassalage, Serfdom
 Fiber Optics Modern Era	7500	Computers or Laser	Space Ship Cockpit	obsoletes Kremlin (W)
 Fishing Ancient Era	40	—	Fishing Boat Work Boat	can work water tiles
 Fission Industrial Era	5500	Electricity	Tactical Nuke*, ICBM* Nuclear Plant, Manhattan Project (WP)	—
 Flight Modern Era	5000	Physics, Combustion	Paratrooper*, Carrier, Fighter, Bomber* Airport	—
 Fusion Future Era	8000	Fiber Optics, Fission	Space Ship Engine	first to discover receives Great Engineer
 Future Tech Future Era	10 000	Stealth, Genetics	multiple future techs may be researched	+1 health in all cities +1 happy in all cities
 Genetics Future Era	7000	Medicine, Superconductors	Space Ship Stasis Chamber	+3 health in all cities
 Guilds Medieval Era	1000	Feudalism, Machinery	Knight*, Camel Archer*, Cataphract* Grocer*, Apothecary*	+1 hammer from Workshop
 Gunpowder Renaissance Era	1200	Education or Guilds	Musketman, Musketeer, Janissary, Oromo Warrior, Conquistador*, Cuirassier*	enables Pinch
 Horseback Riding Classical Era	250	Animal Husbandry	Horse Archer*, Numidian Cav.*, Keshik*, Knight*, Camel Archer*, Cataphract*, Conquistador*, Cuirassier*, Cavalry*, Cossack*, War Elephant*, Ballista Elephant* Stable, Ger	
 Hunting Ancient Era	40	—	Camp Scout, Spearman, Impi, Holkan	—
 Industrialism Industrial Era	6500	Electricity, Assembly Line	Marine*, Navy SEAL*, Tank*, Panzer*, Battleship Industrial Park	reveals Aluminum obsoletes Ivory
 Iron Working Classical Era	200	Bronze Working	Swordsman, Jaguar, Gallic Warrior, Praetorian	can remove Jungle reveals Iron

Terrain	Moving cost	Production	Other effects	Resources possible
 Grassland base terrain	1	2 food +1 commerce with river	—	Copper, Corn, Cow, Gems, Horse, Iron, Pig, Rice, Sheep, Uranium
 Plains base terrain	1	1 food, 1 hammer +1 commerce with river	—	Copper, Cow, Horse, Iron, Ivory, Marble, Sheep, Stone, Uranium, Wheat, Wine
 Desert base terrain	1	+1 commerce with river	improvements take +25% time to build	Copper, Incense, Iron, Oil, Stone, Uranium
 Tundra base terrain	1	1 food +1 commerce with river	improvements take +25% time to build	Copper, Deer, Fur, Horse, Iron, Marble, Oil, Uranium
 Snow base terrain	1	—	improvements take +50% time to build	Copper, Fur, Iron, Marble, Oil, Uranium
 Coast base terrain	1	1 food, 2 commerce	+10% defense	Clam, Crab, Fish
 Ocean base terrain	1	1 food, 1 commerce	—	Fish, Oil, Whale
 Fallout terrain feature	2	-3 all	+0.5 unhealthiness in nearby cities cannot build any improvements	—
 Hill land terrain feature	1	-1 food, +1 hammer +1 commerce with river	+25% defense	Aluminum, Coal, Copper, Deer, Gold, Iron, Marble, Pig, Sheep, Silver, Stone, Uranium, Wine
 Peak land terrain feature	impassable	—	—	—
 Jungle Grassland feature	2	-1 food	+50% defense +0.25 unhealthiness in nearby cities	Banana, Dye, Gems, Ivory, Oil, Rice, Spices, Sugar, Uranium
 Oasis Desert feature	2	+3 food +2 commerce	source of fresh water cannot build any improvements	—
 Flood Plains Desert feature	2	+3 food	+0.4 unhealthiness in nearby cities	—
 Forest Grass, Plains, Tundra, Snow feature	2	+1 hammer	+50% defense +0.5 healthy in nearby cities	Deer, Fur, Silk, Spices, Uranium
 Ice water terrain feature	impassable	—	—	—

Improvement	Base bonus	Bonus with Resources, Techs and Civics	Other effects
 Camp <i>requires: Hunting</i>		Deer +2 F Fur +3 C Ivory +1 H, +1 C	pillaging yields 5 gold*
 Cottage +1 C <i>requires: Pottery</i>			becomes a Hamlet in 10 turns** pillaging yields 10 gold
 Farm +1 F <i>requires: Agriculture</i>		Corn, Wheat +2 F Rice +1 F +1 F with Irrigation (Civil Service) +1 F with Biology	can only be built on flatlands pillaging yields 5 gold
 Fishing Boats <i>requires: Fishing</i>		Clam, Crab +2 F Fish +3 F	can only be built on water pillaging yields 5 gold
 Forest Preserve +1 happiness <i>requires: Scientific Method</i>		+1 C next to river +2 C with Environmentalism	gives Forest / Jungle a higher chance of spreading (only tiles without improvements)
 Fort <i>requires: Mathematics</i>			+25% tile defense acts as a city for combat purposes can be used as a port by Naval Units
 Hamlet +2 C <i>upgrade from Cottage</i>			becomes a Village in 20 turns** pillaging yields 15 gold
 Lumbermill +1 H <i>requires: Replaceable Parts</i>		+1 C next to river +1 H with Railroad	can only be built in Forest pillaging yields 5 gold
 Mine +2 H <i>requires: Mining</i>		Aluminum +3 H, +1 C Coal, Copper, Iron +3 H Uranium +3 C Gems +1 H, +5 C Gold +1 H, +6 C Silver +1 H, +4 C	+1 H with Railroad chance of discovering resources pillaging yields 10 gold
 Offshore Platform <i>requires: Plastics</i>		Oil +2 H, +1 C	can only be built on water pillaging yields 10 gold
 Pasture <i>requires: Animal Husbandry</i>		Horse +2 H, +1 C Cow +1 F, +2 H Pig +3 F Sheep +2 F, +1 C	pillaging yields 5 gold
 Plantation <i>requires: Calendar</i>		Banana +2 F Dye +4 C Incense +5 C Silk +3 C Spices +1 F, +2 C Sugar +1 F, +1 C	pillaging yields 5 gold

Tech	Beakers**	Prereq. Techs	Can build	Effects
 Combustion Industrial Era	3600	Railroad	Well Transport, Destroyer, Attack Submarine* Public Transportation, Creative Constr. (C)*	obsoletes Whale
 Communism Industrial Era	2800	Scientific Method, Liberalism	Intelligence Agency, Kremlin (W)	first to discover receives Great Spy enables permanent alliances enables State Property
 Compass Classical Era	400	Iron Working, Sailing	Explorer Harbor, Cothon	—
 Composites Modern Era	7500	Satellites, Plastics	Modern Armor* Space Ship Casing	—
 Computers Modern Era	6500	Plastics, Radio	Modern Armor* Internet (WP)	obsoletes Angkor Wat (W), Spiral Minaret (W), University of Sankore (W)
 Constitution Renaissance Era	2000	Code of Laws, Nationalism	Jail, Mausoleum	enables Representation
 Construction Classical Era	350	Mathematics, Masonry	War Elephant*, Ballista Elephant*, Catapult, Hwacha Colosseum, Odeon, Ball Court, Garden	crossing rivers no longer slows unit movement
 Corporation Renaissance Era	1600	Constitution, Economy	Wall Street (NW), all Corporations*	+1 Trade Route per city obsoletes Great Lighthouse (W)
 Currency Classical Era	400	Mathematics or Alphabet	Market, Forum, Grocer*, Apothecary*	+1 Trade Route per city enables gold trade via diplomacy enables a city to build Wealth
 Democracy Renaissance Era	2800	Printing Press, Constitution	Security Bureau, Statue of Liberty (W)	enables Universal Suffrage, Emancipation
 Divine Right Medieval Era	1200	Theology, Monarchy	Versailles (W), Spiral Minaret (W)	first to discover founds Islam
 Drama Classical Era	300	Aesthetics	Theatre, Pavilion, Hippodrome, Globe Theatre (NW)	can adjust culture rate
 Ecology Modern Era	5500	Plastics or Fission, Biology	Recycling Center, Space Ship Life Support	can scrub Fallout
 Economics Renaissance Era	1400	Education, Banking	Customs House, Feitoria	first to discover receives Great Merchant enables Free Market obsoletes Castle
 Education Renaissance Era	1800	Paper	University, Seowon, Oxford University (NW)	—
 Electricity Industrial Era	4500	Physics	Bunker, Bomb Shelters, Broadway (W)	+1 commerce from Windmill +2 commerce from Watermill

Tech	Beakers**	Prereq. Techs	Can build	Effects
	Advanced Flight Modern Era 5000	Satellites, Flight	Gunship, Jet Fighter	obsoletes Stable
	Aesthetics Classical Era 300	Writing	Parthenon (W), Statue of Zeus (W), Shwedagon Paya (W)	—
	Agriculture Ancient Era 60	—	Farm	—
	Alphabet Classical Era 300	Writing	Spy	enables technology trading enables a city to build Research
	Animal Husbandry Ancient Era 100	Hunting or Agriculture	Pasture	reveals Horse
	Archery Ancient Era 60	Hunting	Archer, Skirmisher, Bowman, Longbowman*, Crossbowman*, Cho-Ko-Nu*, Horse Archer*, Numidian Cavalry*, Keshik*, Camel Archer*	—
	Artillery Industrial Era 4000	Physics, Steel, Rifling	Anti-Tank, Artillery, Mobile Artillery*	—
	Assembly Line Industrial Era 5000	Corporation, Steam Power	Infantry*, Factory, Assembly Plant, Coal Plant, Shale Plant, Pentagon (W)	—
	Astronomy Renaissance Era 2000	Calendar, Optics	Galleon, East Indiaman, Privateer*, Frigate*, Ship of the Line*, Observatory, Salon	enables trade on Ocean obsoletes Monument, Stonehenge (W), Colossus (W)
	Banking Medieval Era 700	Currency, Guilds	Bank, Stock Exchange	enables Mercantilism
	Biology Industrial Era 3600	Scientific Method, Chemistry	National Park (NW)	can build Farm without irrigation +1 food from Farm
	Bronze Working Ancient Era 120	Mining	Axeman, Phalanx, Vulture, Dog Soldier, Holkan*	can chop down a Forest reveals Copper enables Slavery
	Calendar Classical Era 350	Sailing, Mathematics	Plantation Mausoleum of Maussollos (W)	centers World Map
	Chemistry Renaissance Era 1800	Engineering, Gunpowder	Privateer*, Frigate*	+1 hammer from Workshop
	Civil Service Medieval Era 800	Code of Laws or Feudalism, Mathematics	Maceman*, Samurai*, Berserker*	Farms spread irrigation enables Bureaucracy
	Code of Laws Classical Era 350	Priesthood or Currency, Writing	Courthouse, Sacrificial Altar, Rathaus, Chichen Itza (W)	enables Caste System first to discover founds Confucianism

Improvement	Base bonus	Bonus with Resources, Techs and Civics	Other effects
 Quarry <i>requires: Masonry</i>	Marble +1 H, +2 C Stone +2 H	+1 H with Railroad	pillaging yields 5 gold
 Railroad <i>requires: Railroad, Coal, Iron</i>			0.1 movement point on any tile +1 H for Mines, Quarries, and Lumbermills
 Road <i>requires: The Wheel</i>			0.5 movement point on any tile
 Town <i>upgrade from Village</i>	+4 C	+1 H with Universal Suffrage +2 C with Free Speech +1 C with Printing Press	pillaging yields 25 gold
 Village <i>upgrade from Hamlet</i>	+3 C	+1 C with Printing Press	becomes a Town in 40 turns** pillaging yields 20 gold
 Watermill <i>requires: Machinery</i>	+1 H	+1 F with State Property +1 H with Repl. Parts +2 C with Electricity	requires river can only be built on flatlands pillaging yields 5 gold
 Well <i>requires: Combustion</i>	Oil +2 H, +1 C		pillaging yields 10 gold
 Whaling Boat <i>requires: Optics</i>	Whale +1 H, +2 C		can only be built on water pillaging yields 5 gold
 Windmill <i>requires: Machinery</i>	+1 F, +1 C	+1 H with Repl. Parts +1 C with Electricity +2 C with Environmentalism	pillaging yields 5 gold
 Winery <i>requires: Monarchy</i>	Wine +1 F, +2 C		pillaging yields 10 gold
 Workshop <i>requires: Metal Casting</i>	-1 F, +1 H	+1 F with State Property +1 H with Caste System +1 H with Guilds +1 H with Chemistry	can only be built on flatlands pillaging yields 5 gold

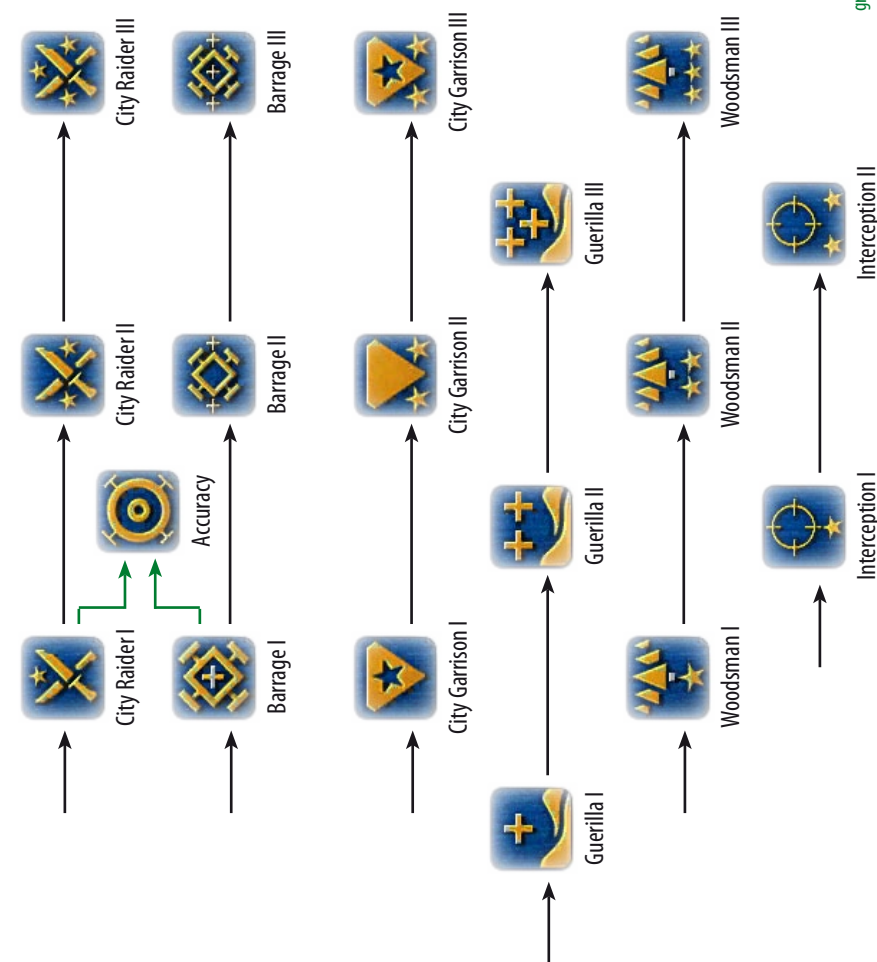
F food H hammers C commerce

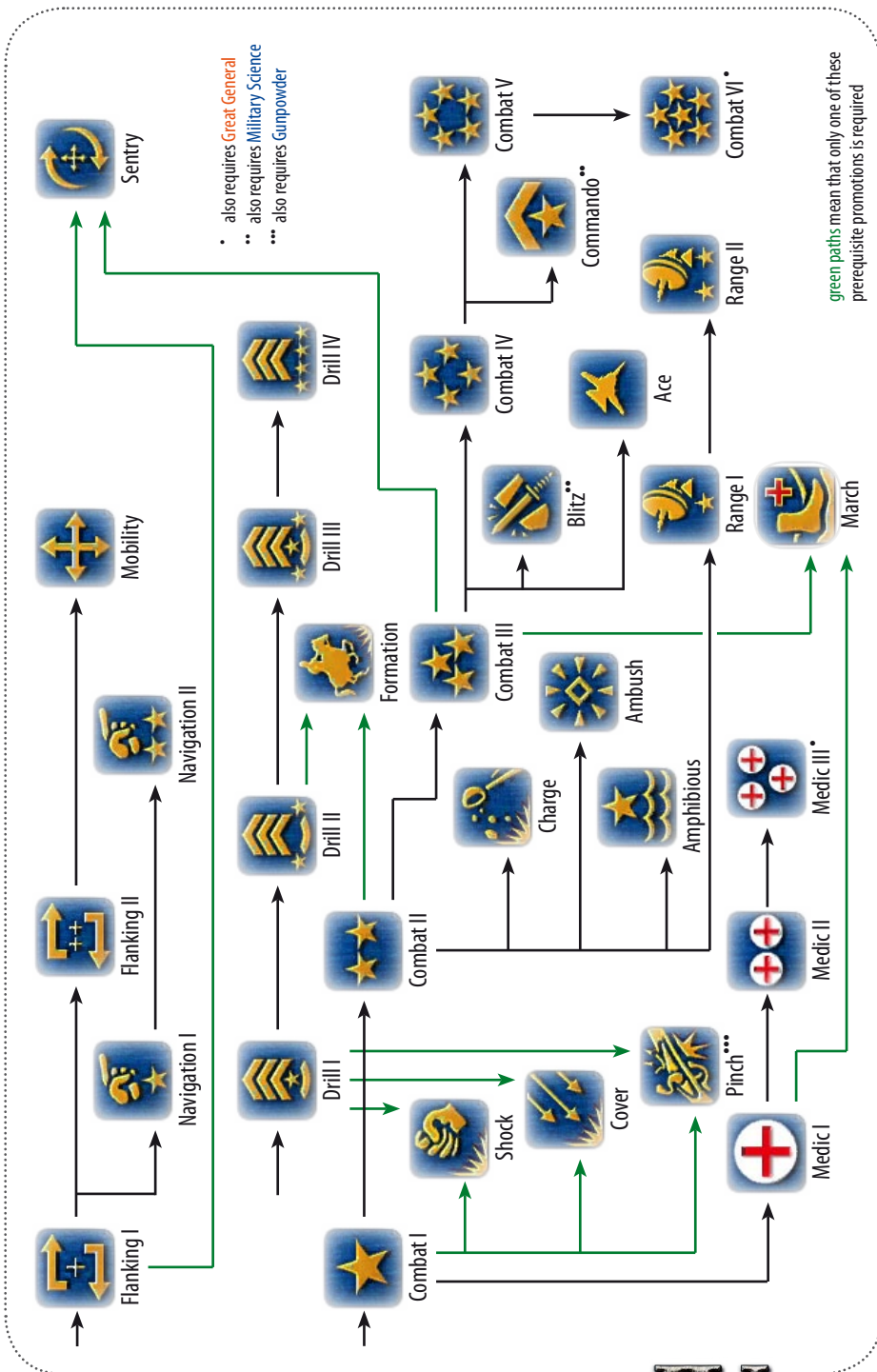
* All pillage yields in this list represent averages.

** Assumes **Normal** Game Speed; number of turns varies with game length. Factors for other conditions are:

Quick ×0.67, **Epic** ×1.50, **Marathon** ×3.00 (!). For example, at Epic speed a Village will become a Town in 60 turns rather than 40.

















Resources	Base & Improv. bonus	Other changes	Terrain appearance
 Aluminum Mine	+1 H +3 H, +1 C	revealed by Industrialism	Plains, Desert, Tundra (Hills only)
 Banana Plantation	+1 F +1 health, +2 F	Grocer / Apothecary * +1 health	Grassland with Jungle only (Flatlands only)
 Clam Fishing Boats	+1 F +1 health, +2 F	Harbor / Cothon * +1 health	Coast only
 Coal Mine	+1 H +3 H	revealed by Steam Power Factory / Assembly Plant * +1 unhealthiness Industrial Park +1 unhealthiness	Grassland with Hills Plains with Hills
 Copper Mine	+1 H +3 H	revealed by Bronze Working	Grassland, Plains, Desert, Tundra, Snow (Flatlands and Hills)
 Corn Farm	+1 F +1 health, +2 F	Granary / Terrace * +1 health	Grassland without any features only
 Cow Pasture	+1 F +1 health, +1 F, +2 H	Supermarket / Mall * +1 health	Grassland and Plains without any features
 Crab Fishing Boats	+1 F +1 health, +2 F	Harbor / Cothon * +1 health	Coast only
 Deer Camp	+1 F +1 health, +2 F	Supermarket / Mall * +1 health	Tundra and Tundra with Forest (Flatlands and Hills)
 Dye Plantation	+1 C +1 happy, +4 C	Theatre / Pavilion * +1 happy	Grassland with Jungle only (Flatlands only)
 Fish Fishing Boats	+1 F +1 health, +3 F	Harbor / Cothon * +1 health	Coast and Ocean
 Fur Camp	+1 C +1 happy, +3 C	Market / Forum * +1 happy obsolete with Plastics	Tundra and Snow with any features
 Gems Mine	+1 C +1 happy, +1 H, +5 C	Forge / Mint * +1 happy	Grassland with Jungle (Flatlands and Hills)
 Gold Mine	+1 C +1 happy, +1 H, +6 C	Forge / Mint * +1 happy	Plains with Hills Desert with Hills
 Hit Movies	+1 happy	Broadcast Tower +1 happy Mall * +1 happy	generated by Hollywood
 Hit Musicals	+1 happy	Broadcast Tower +1 happy Mall * +1 happy	generated by Broadway
 Hit Singles	+1 happy	Broadcast Tower +1 happy Mall * +1 happy	generated by Rock 'n' Roll
 Horse Pasture	+1 H +2 H, +1 C	revealed by Animal Husbandry Hippodrome * +1 happy	Grassland, Plains, Tundra (Flatlands only)








Resources	Base & Improv. bonus	Other changes	Terrain appearance
Incense Plantation	+1 C +1 happy, +5 C	+1 C all religion Cathedrals +1 happy	Flatland Desert only
Iron Mine	+1 H +3 H	revealed by Iron Working	Grassland, Plains, Desert, Tundra, Snow (Flatlands and Hills)
Ivory Camp	+1 H +1 happy, +1 H, +1 C	Market / Forum* +1 happy obsolete with Industrialism	Grassland with Jungle, Plains (Flatlands only)
Marble Quarry	+1 H +1 H, +2 C	—	Plains, Tundra, Snow (Flatlands and Hills)
Oil Well, Offshore Platform	+1 H +2 H, +1 C	revealed by Scientific Method Factory / Assembly Plant* +2 unhealthiness Industrial Park +1 unhealthiness Public Transportation +1 health	Desert, Tundra, Snow (without any features) Ocean, Grassland with Jungle
Pig Pasture	+1 F +1 health, +3 F	Supermarket / Mall* +1 health	Grassland and Grassland with Jungle (Flatlands and Hills)
Rice Farm	+1 F +1 health, +1 F	Granary / Terrace* +1 health	Grassland and Grassland with Jungle (Flatlands only)
Sheep Pasture	+1 F +1 health, +2 F, +1 C	Supermarket / Mall* +1 health	Grassland and Plains (Flatlands and Hills)
Silk Plantation	+1 C +1 happy, +3 C	Market / Forum* +1 happy	Grassland and Plains (Flatlands with Forest only)
Silver Mine	+1 C +1 happy, +1 H, +4 C	Forge / Mint* +1 happy	Tundra with Hills Snow with Hills
Spices Plantation	+1 C +1 happy, +2 C	Grocer / Apothecary* +1 health	Grassland and Plains (Flatlands with Forest or Jungle)
Stone Quarry	+1 H +2 H	—	Plains and Desert (Flatlands and Hills)
Sugar Plantation	+1 C +1 happy, +1 F, +1 C	Grocer / Apothecary* +1 health	Grassland with Jungle only (Flatlands only)
Uranium Mine	+3 C	revealed by Physics	all land terrain
Whale Whaling Boats	+1 F +1 happy, +2 H, +1 C	Market / Forum* +1 happy obsolete with Combustion	Ocean only
Wheat Farm	+1 F +1 health, +2 F	Granary / Terrace* +1 health	Flatland Plains only
Wine Winery	+1 C +1 happy, +1 F, +2 C	Grocer / Apothecary* +1 health	Plains (Flatlands and Hills)


F food H hammers C commerce
 * unique building


Building	Hammers*	Prerequisites	Effects
 Airport	250	Flight	+1 unhealthiness +1 Trade Route, +3 XP for new Air Units +4 Air Unit capacity, can airlift 1 unit per turn
 Apothecary Persian unique (Grocer)	150	Guilds, Currency	+2 health, +25% gold +1 health from Banana , Spices , Sugar , Wine can turn 2 Citizens into Merchant
 Aqueduct	100	Mathematics, Masonry	+2 health
 Assembly Plant German unique (Factory) 67% with Coal	250	Assembly Line	+25% hammers (+50% with Power) +1 unhealthiness, +2 unhealthiness from Oil , Coal can turn 4 Citizens into Engineer
 Ball Court Maya unique (Colosseum)	80	Construction	+3 happy +1 happy per 20% culture rate
 Bank	200	Banking	+50% gold
 Baray Khmer unique (Aqueduct)	100	Mathematics, Masonry	+1 food +2 health
 Barracks	50	—	+3 XP for new Land Units +2 happy with Nationhood
 Bomb Shelter	100	Electricity Manhattan Project	–50% damage from Tactical Nuke and ICBM
 Broadcast Tower	175	Mass Media	+50% culture, +1 happy per 10% culture, +1 happy from Hit Musicals , Hit Singles , Hit Movies , +1 happy with Charismatic trait, can turn 2 Citizens into Artist
 Buddhist Monastery	60	Meditation, Buddhism <i>obsolete with Scientific Method</i>	+10% science, +2 culture
 Buddhist Stupa 50% with Copper	300	Music, Buddhism Buddhist Temple (2) **	+50% culture, +1 happy with Incense +2 happy with Buddhism as a State Religion can turn 2 Citizens into Priest
 Buddhist Temple	80	Priesthood Buddhism	+1 culture, +1 happy can turn 1 Citizen into Priest
 Bunker	100	Electricity	–50% damage from Air Units
 Castle 50% with Stone	100	Engineering, Walls <i>obsolete with Economics</i>	+1 culture, +25% espionage, +1 Trade Route +50% defense (except Gunpowder Units) –25% damage from bombard. (except Gunpowder Units)
 Christian Cathedral 50% with Stone	300	Music, Christianity Christian Temple (2) **	+50% culture, +1 happy with Incense +2 happy with Christianity as a State Religion can turn 2 Citizens into Priest

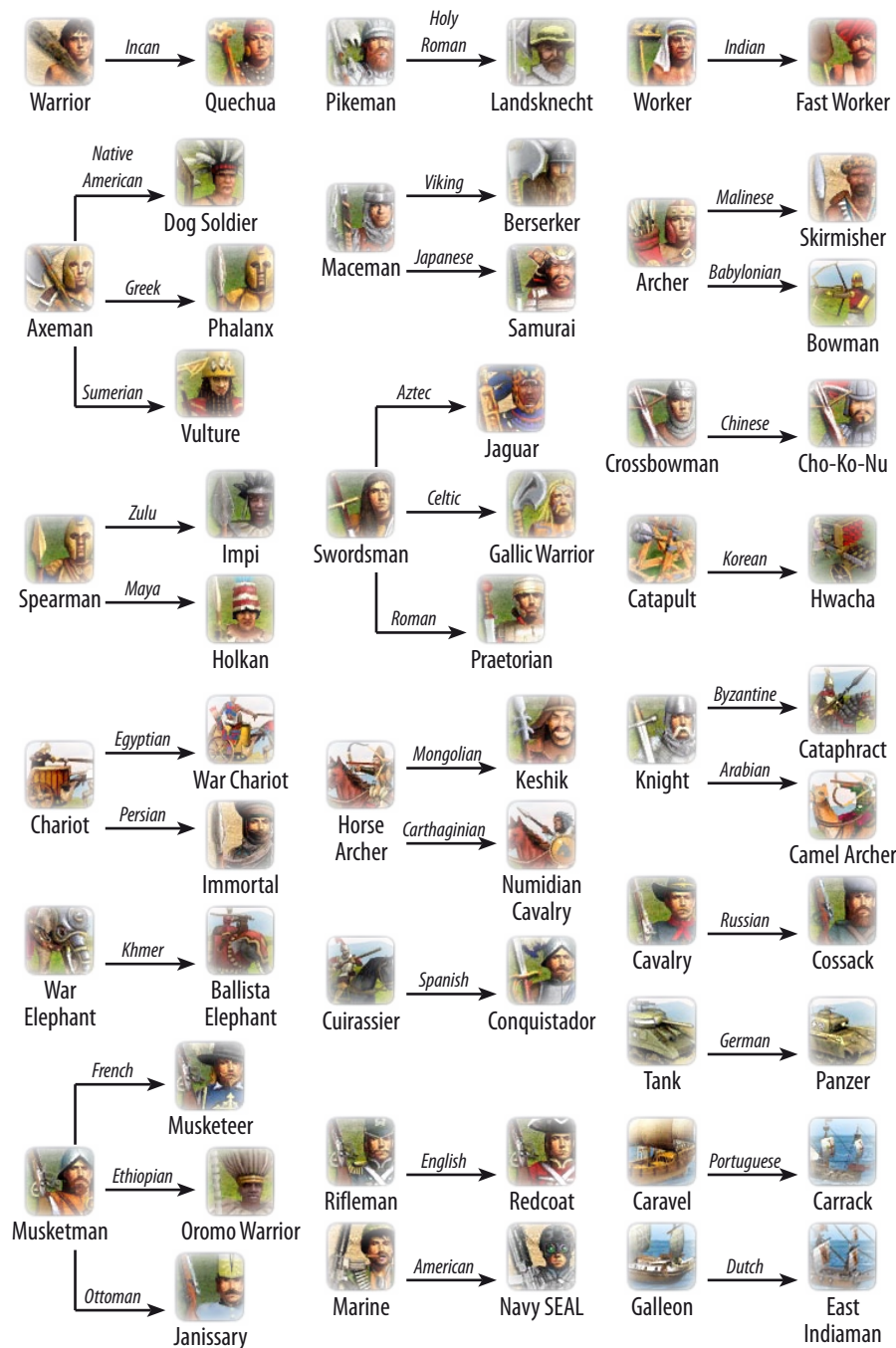
Promotion	Eligible Units	Effects
 March <i>requires: Combat III or Medic I</i>	Recon, Archery, Melee, Mounted, Siege, Gunpowder	can heal while moving
 Medic I <i>requires: Combat I</i>	Recon, Archery, Melee, Mounted, Siege, Gunpowder, Naval	heals units in the same tile extra 10% damage per turn
 Medic II <i>requires: Medic I</i>	Recon, Archery, Melee, Mounted, Siege, Gunpowder, Naval	heals units in adjacent tiles extra 10% damage per turn
 Medic III <i>requires: Medic II, Great General</i>	Recon, Archery, Melee, Mounted, Siege, Gunpowder, Naval	heals units in the same tile extra 15% damage per turn heals units in adjacent tiles extra 15% damage per turn
 Mobility <i>requires: Flanking II</i>	Mounted, Armored	–1 terrain movement cost
 Morale <i>requires: Great General</i>	all except Air	+1 movement range
 Navigation I <i>requires: Flanking I</i>	Naval	+1 movement range
 Navigation II <i>requires: Flanking I, Navigation I</i>	Naval	+1 movement range
 Pinch <i>requires: Combat I or Drill I, Gunpowder</i>	Mounted, Gunpowder, Armored, Helicopter, Air	+25% vs. Gunpowder Units
 Range I <i>requires: Combat II</i>	Air	+1 operational range
 Range II <i>requires: Range I</i>	Air	+1 operational range
 Sentry <i>requires: Flanking I or Combat III</i>	Recon, Mounted, Helicopter, Naval	+1 visibility range
 Shock <i>requires: Combat I or Drill I</i>	Archery, Mounted, Melee, Siege	+25% vs. Melee Units
 Tactics <i>requires: Great General</i>	all except Air	+30% withdrawal chance
 Woodsman I	Recon, Melee, Gunpowder	+20% jungle and forest defense
 Woodsman II <i>requires: Woodsman I</i>	Recon, Melee, Gunpowder	double movement in jungle and forest +30% jungle and forest defense
 Woodsman III <i>requires: Woodsman II</i>	Melee, Gunpowder	+2 first strikes heals units in the same tile extra 15% damage per turn +50% jungle and forest attack

Promotion	Eligible Units	Effects
 Combat IV <i>requires: Combat III</i>	all	+10% strength heals extra 10% damage per turn in neutral lands
 Combat V <i>requires: Combat IV</i>	all	+10% strength heals extra 10% damage per turn in enemy lands
 Combat VI <i>requires: Combat V, Great General</i>	all	+25% strength
 Commando <i>requires: Combat IV, Military Science</i>	Recon, Archery, Melee, Mounted, Gunpowder, Armored	can use enemy Roads and Railroads
 Cover <i>requires: Combat I or Drill I</i>	Archery, Melee, Gunpowder	+25% vs. Archery Units
 Drill I	Archery, Siege, Gunpowder, Armored, Helicopter, Naval	+1 first strike chance
 Drill II <i>requires: Drill I</i>	Archery, Siege, Melee, Gunpowder, Armored, Helicopter, Naval	+1 first strike suffers -20% collateral damage
 Drill III <i>requires: Drill II</i>	Archery, Siege, Melee, Gunpowder, Armored, Helicopter, Naval	+2 first strike chances suffers -20% collateral damage
 Drill IV <i>requires: Drill III</i>	Archery, Siege, Melee, Gunpowder, Armored, Helicopter, Naval	+2 first strikes suffers -20% collateral damage +10% vs. Mounted Units
 Flanking I	Mounted, Armored, Helicopter, Naval	+10% withdrawal chance
 Flanking II <i>requires: Flanking I</i>	Mounted, Armored, Helicopter, Naval	immune to first strikes +20% withdrawal chance
 Formation <i>requires: Combat II or Drill II</i>	Archery, Mounted, Melee, Gunpowder	+25% vs. Mounted Units
 Guerilla I	Recon, Archery, Gunpowder	+20% hills defense
 Guerilla II <i>requires: Guerilla I</i>	Recon, Archery, Melee, Gunpowder	double movement in hills +30% hills defense
 Guerilla III <i>requires: Guerilla II</i>	Archery, Melee, Gunpowder	+25% hills attack +50% withdrawal chance
 Interception I	Gunpowder, Air	+10% interception chance
 Interception II <i>requires: Interception I</i>	Gunpowder, Air	+20% interception chance
 Leadership <i>requires: Great General</i>	all except Air	gains +100% experience from combat

















Building	Hammers*	Prerequisites	Effects
 Christian Monastery 60 <i>Spanish unique (Castle)</i> <i>50% with Stone</i>		Meditation, Christianity <i>obsolete with Scientific Method</i>	+10% science, +2 culture
 Christian Temple 80		Priesthood Christianity	+1 culture, +1 happy can turn 1 Citizen into Priest
 Citadel 100 <i>Spanish unique (Castle)</i> <i>50% with Stone</i>		Engineering, Walls <i>obsolete with Economics</i>	+1 culture, +25% espionage, +1 Trade Route +50% defense (except Gunpowder Units) -25% damage from bombard. (except Gunpowder Units) +5 XP for new Siege Weapons
 Coal Plant 150		Assembly Line Factory	+2 unhealthiness provides Power with Coal
 Colosseum 80		Construction	+1 happy +1 happy per 20% culture rate
 Confucian Academy 300 <i>50% with Copper</i>		Music, Confucianism Confucian Temple (2)**	+50% culture, +1 happy with Incense +2 happy with Confucianism as a State Religion can turn 2 Citizens into Priest
 Confucian Monastery 60		Meditation, Confucianism <i>obsolete with Scientific Method</i>	+10% science, +2 culture
 Confucian Temple 80		Priesthood Confucianism	+1 culture, +1 happy can turn 1 Citizen into Priest
 Cothon 100 <i>Carthaginian unique (Harbor)</i> <i>can only be built in coastal city</i>		Compass	+1 health from Clam, Crab, Fish +1 Trade Route +50% commerce from Trade Routes
 Courthouse 120		Code of Laws	+2 espionage, -50% maintenance can turn 1 Citizen into Spy
 Customs House 180 <i>can only be built in coastal city</i>		Economics Harbor	+100% commerce from intercontinental foreign Trade Routes
 Dike 180 <i>Dutch unique (Levee)</i> <i>can only be built in coastal or river city</i>		Steam Power	+1 hammer on river tiles +1 hammer on water tiles
 Drydock 120 <i>can only be built in coastal city</i>		Steel	+1 unhealthiness +4 XP for new Naval Units +50% Naval Units production
 Dun 50 <i>Celtic unique (Walls)</i> <i>50% with Stone</i>		Masonry <i>obsolete with Rifling</i>	+50% defense (except Gunpowder Units) -50% damage from bombard. (except Gunpowder Units) Guerilla I promotion for new Land Units
 Factory 250		Assembly Line	+25% hammers (+50% with Power) +1 unhealthiness, +2 unhealthiness from Oil, Coal can turn 2 Citizens into Engineer
 Feitoria 180 <i>Portuguese un. (Cust. House)</i> <i>can only be built in coastal city</i>		Economics Harbor	+1 commerce on water tiles +100% commerce from intercontinental foreign Trade Routes

Building	Hammers*	Prerequisites	Effects
 Forge	120	Metal Casting	+1 happy from Gems, Gold, Silver +25% hammers, +1 unhealthiness can turn 1 Citizen into Engineer
 Forum Roman unique (Market)	150	Currency	+25% gold, +25% Great People Birth Rate +1 happy from Fur, Ivory, Silk, Whale can turn 2 Citizens into Merchant
 Garden Babylonian unique (Colosseum)	80	Construction	+2 health, +1 happy +1 happy per 20% culture rate
 Ger Mongolian unique (Stable)	60	Horseback Riding <i>obsolete with Advanced Flight</i>	+4 XP for new Mounted Units
 Granary	60	Pottery	+1 health from Corn, Rice, Wheat half the city's food supply remains after population growth
 Grocer	150	Guilds, Currency	+25% gold +1 health from Banana, Spices, Sugar, Wine can turn 2 Citizens into Merchant
 Hammam Ottoman unique (Aqueduct)	100	Mathematics, Masonry	+2 health +2 happiness
 Harbor <i>can only be built in coastal city</i>	80	Compass	+1 health from Clam, Crab, Fish +50% commerce from Trade Routes
 Hindu Mandir <i>50% with Marble</i>	300	Music, Hinduism Hindu Temple (2)**	+50% culture, +1 happy with Incense +2 happy with Hinduism as a State Religion can turn 2 Citizens into Priest
 Hindu Monastery	60	Meditation, Hinduism <i>obsolete with Scientific Method</i>	+10% science, +2 culture
 Hindu Temple	80	Priesthood Hinduism	+1 culture, +1 happy can turn 1 Citizen into Priest
 Hippodrome Byzantine unique (Theatre)	50	Drama	+1 happy, +1 happy per 5% culture rate +3 culture, +1 happy from Horse
 Hospital	200	Medicine	+3 health heals units +10% extra per turn
 Hydro Plant <i>can only be built in river city</i>	200	Plastics Factory	provides Power
 Ikhandas Zulu unique (Barracks)	50	—	+3 XP for new Land Units -20% maintenance +2 happy with Nationhood
 Industrial Park	200	Industrialism Factory	+2 unhealthiness +1 unhealthiness from Coal, Oil (each) 1 free Engineer , can turn 2 Citizens into Engineer

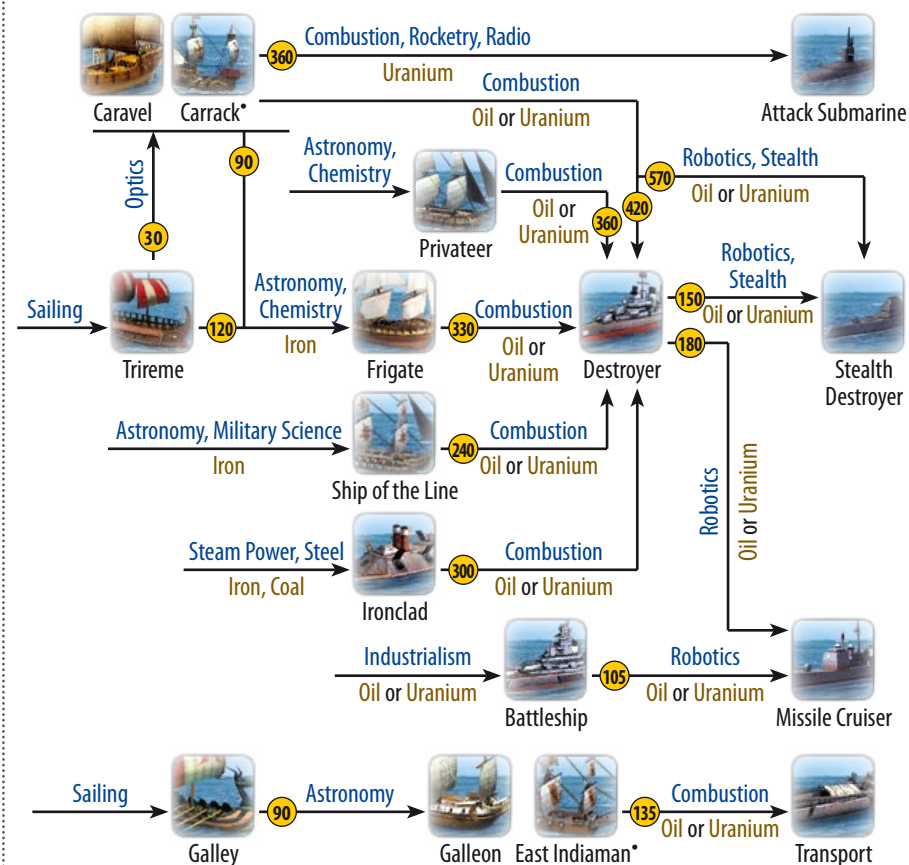
Promotion	Eligible Units	Effects
 Accuracy <i>requires: City Raider I or Barrage I</i>	Siege Weapons	+8% city bombard damage
 Ace <i>requires: Combat III</i>	Air	+25% evasion chance
 Ambush <i>requires: Combat II</i>	Siege, Gunpowder, Air, Helicopter, Armored	+25% vs. Armored Units
 Amphibious <i>requires: Combat II</i>	Recon, Archery, Melee, Mounted, Gunpowder	no combat penalty for attacking from sea no combat penalty for crossing river
 Barrage I	Siege, Armored, Naval	+20% collateral damage
 Barrage II <i>requires: Barrage I</i>	Siege, Armored, Naval	+30% collateral damage +10% vs. Melee Units
 Barrage III <i>requires: Barrage II</i>	Siege, Armored, Naval	+50% collateral damage +10% vs. Gunpowder Units
 Blitz <i>requires: Combat III, Military Science</i>	Mounted, Armored, Helicopter, Naval	can attack multiple times per turn
 Charge <i>requires: Combat I</i>	Mounted, Melee, Armored, Helicopter	+25% vs. Siege Weapons
 City Garrison I	Archery, Gunpowder	+20% city defense
 City Garrison II <i>requires: City Garrison I</i>	Archery, Gunpowder	+25% city defense
 City Garrison III <i>requires: City Garrison II</i>	Archery, Gunpowder	+30% city defense +10% vs. Melee Units
 City Raider I	Melee, Siege, Armored	+20% city attack
 City Raider II <i>requires: City Raider I</i>	Melee, Siege, Armored	+25% city attack
 City Raider III <i>requires: City Raider II</i>	Melee, Siege, Armored	+30% city attack +10% vs. Gunpowder Units
 Combat I	all	+10% strength
 Combat II <i>requires: Combat I</i>	all	+10% strength
 Combat III <i>requires: Combat II</i>	all	+10% strength



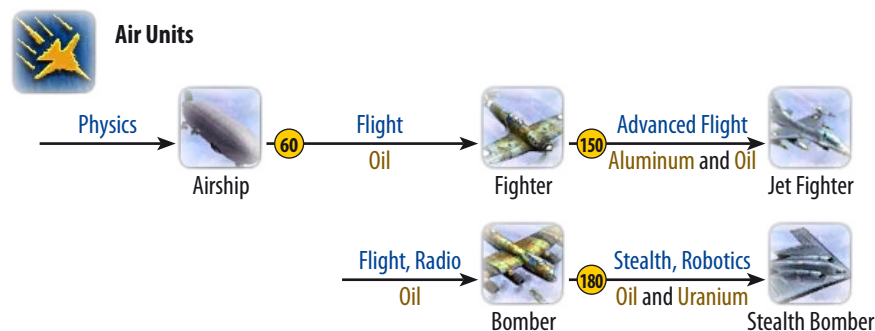
Building	Hammers*	Prerequisites	Effects
Intelligence Agency	180	Communism	+8 espionage, +50% espionage can turn 2 Citizens into Spy
Islamic Monastery	60	Meditation, Islam <i>obsolete with Scientific Method</i>	+10% science, +2 culture
Islamic Mosque	300	Music, Islam <i>50% with Marble</i> Islamic Temple (2)**	+50% culture, +1 happy with Incense +2 happy with Islam as a State Religion can turn 2 Citizens into Priest
Islamic Temple	80	Priesthood Islam	+1 culture, +1 happy can turn 1 Citizen into Priest
Jail	120	Constitution	+4 espionage, +50% espionage -25% war weariness can turn 2 Citizens into Spy
Jewish Monastery	60	Meditation, Judaism <i>obsolete with Scientific Method</i>	+10% science, +2 culture
Jewish Synagogue	300	Music, Judaism <i>50% with Stone</i> Jewish Temple (2)**	+50% culture, +1 happy with Incense +2 happy with Judaism as a State Religion can turn 2 Citizens into Priest
Jewish Temple	80	Priesthood Judaism	+1 culture, +1 happy can turn 1 Citizen into Priest
Laboratory	250	Superconductors Observatory	+25% science, +1 unhealthiness +50% spaceship production can turn 1 Citizen into Scientist
Levee	180	Steam Power	+1 hammer on river tiles <i>can only be built in river city</i>
Library	90	Writing	+25% science, +2 culture can turn 2 Citizens into Scientist
Lighthouse	60	Sailing	+1 food on water tiles <i>can only be built in coastal city</i>
Madrasa	90	Writing	+25% science, +4 culture can turn 2 Citizens into Scientist can turn 2 Citizens into Priest <i>Arabian unique (Library)</i>
Mall	150	Refrigeration	+1 food, +20% gold +1 health from Cow, Deer, Pig, Sheep +1 happy from Hit Musicals, Hit Singles, Hit Movies <i>American unique (Supermarket)</i>
Market	150	Currency	+25% gold +1 happy from Fur, Ivory, Silk, Whale can turn 2 Citizens into Merchant
Mausoleum	120	Constitution	+4 espionage, +50% espionage, +2 happy -25% war weariness can turn 2 Citizens into Spy <i>Indian unique (Jail)</i>

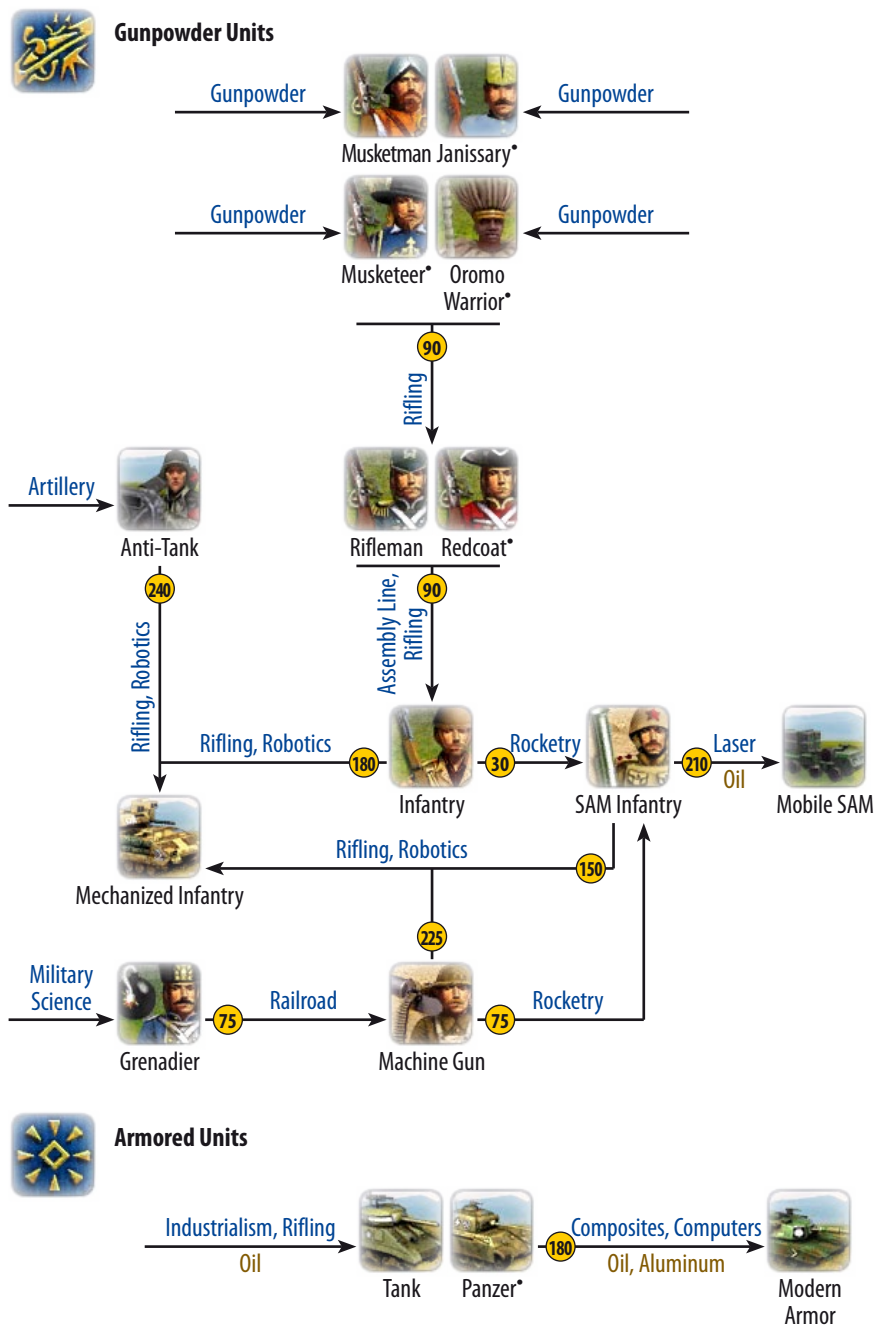
Building	Hammers*	Prerequisites	Effects
 Mint	120	Metal Casting	+1 happy from Gems, Gold, Silver +25% hammers, +10% gold, +1 unhealthiness can turn 1 Citizen into Engineer
 Monument	30	Mysticism <i>obsolete with Astronomy</i>	+1 culture +1 happy with Charismatic trait
 Nuclear Plant	250	Fission Factory	provides Power with Uranium small chance of nuclear meltdown
 Obelisk	30	Mysticism <i>obsolete with Astronomy</i>	+1 culture +1 happy with Charismatic trait can turn 2 Citizens into Priest
 Observatory	150	Astronomy	+25% science can turn 1 Citizen into Scientist
 Odeon	80	Construction	+2 happy, +1 happy per 20% culture rate +1 happy from Hit Singles , +3 culture can turn 2 Citizens into Artist
 Pavilion	50	Drama	+3 culture, +25% culture, +1 happy from Dye +1 happy per 10% culture rate can turn 2 Citizens into Artist
 Public Transportation	150	Combustion	+1 health, +1 health from Oil +2 health with Environmentalism
 Rathaus	120	Code of Laws	+2 espionage -75% maintenance can turn 1 Citizen into Spy
 Recycling Center	300	Ecology	eliminates pollution from city buildings
 Research Institute	250	Superconductors Observatory	+25% science, +1 unhealthiness +50% spaceship production 2 free Scientists , can turn 1 Citizen into Scientist
 Sacrificial Altar	90	Code of Laws	+2 espionage, -50% maintenance -50% anger duration from sacrificing population can turn 1 Citizen into Spy
 Salon	150	Astronomy	+25% science 1 free Artist , can turn 1 Citizen into Scientist
 Security Bureau	220	Democracy	+8 espionage, +50% espionage defense can turn 2 Citizens into Spy helps thwart rival spies
 Seowon	200	Education Library	+35% science, +3 culture
 Shale Plant	150	Assembly Line Factory	+10% hammers, +2 unhealthiness provides Power

Naval Units



Air Units

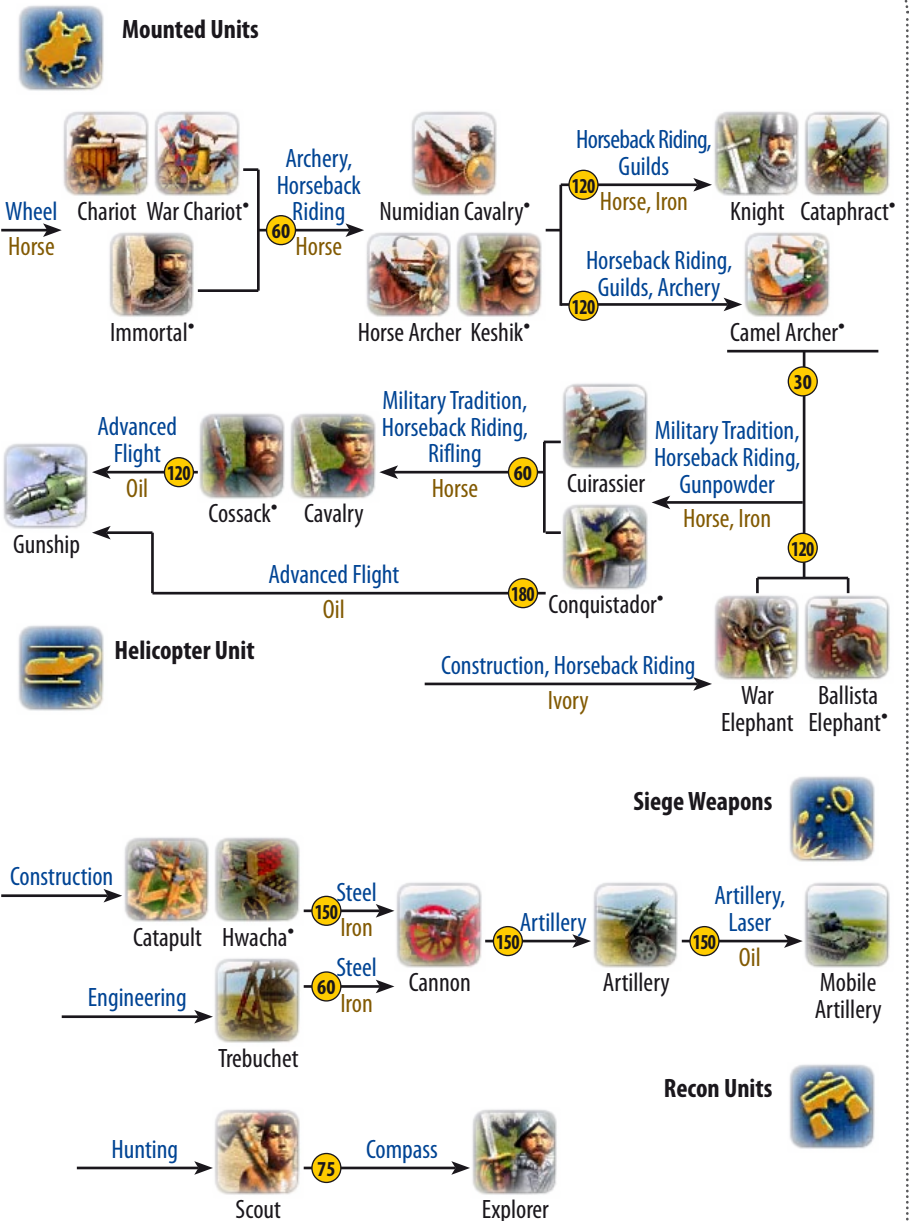
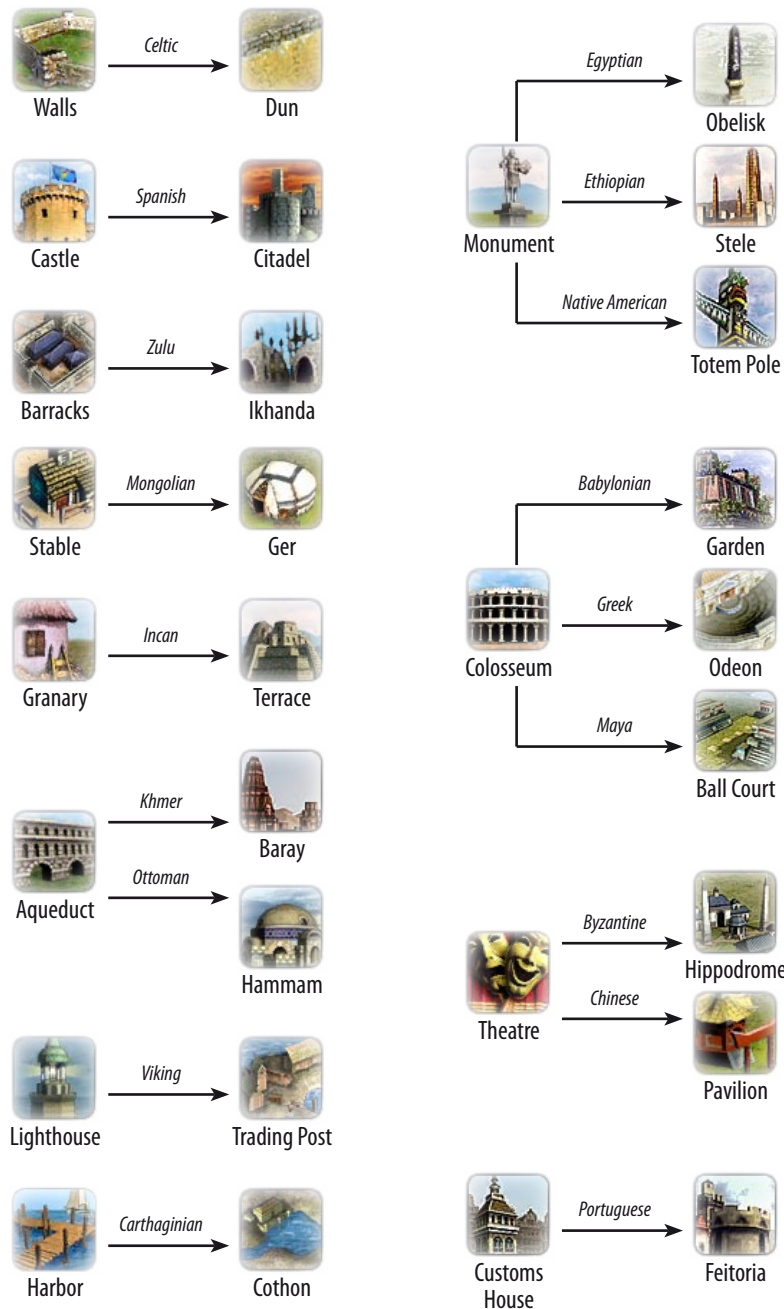




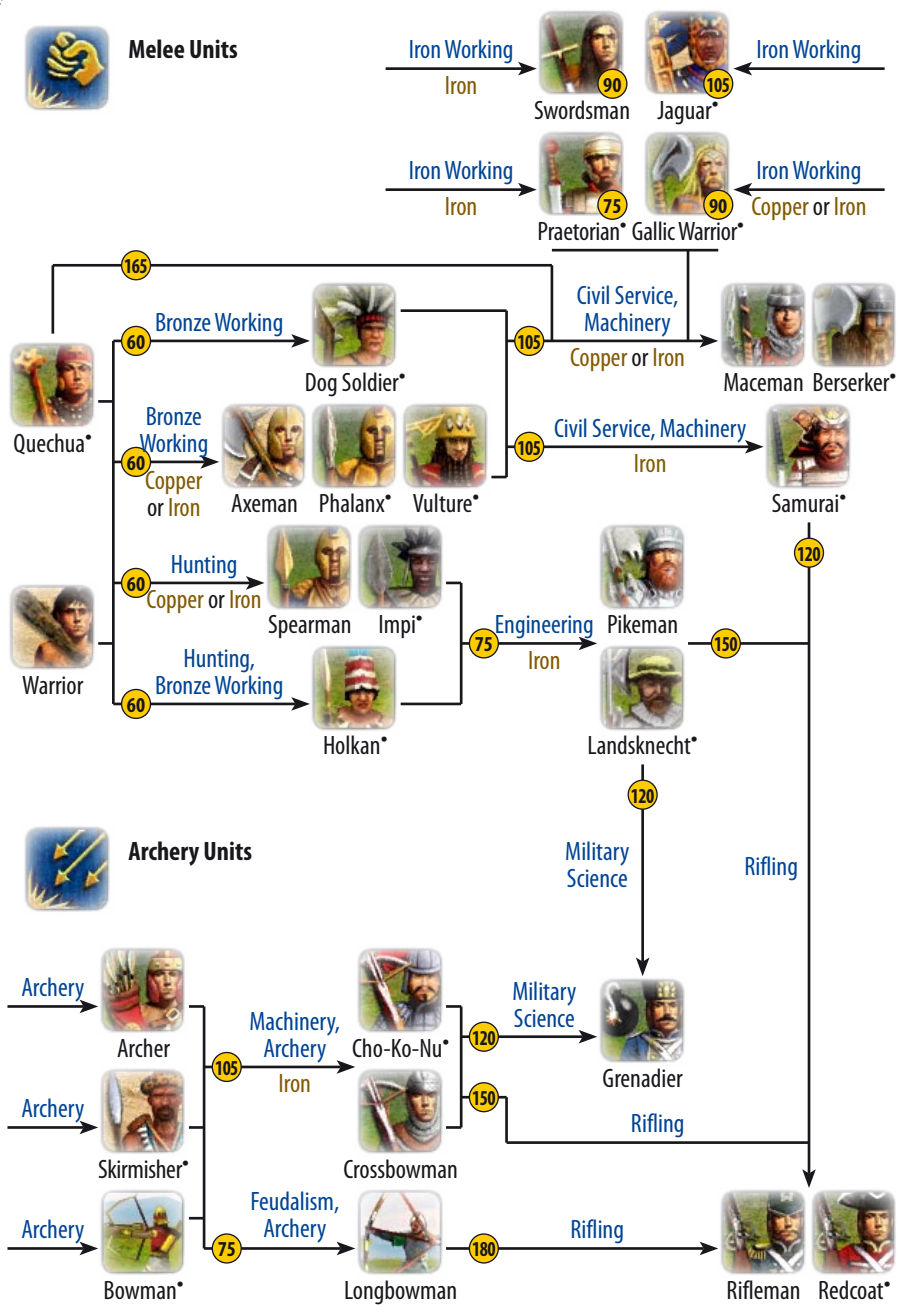
Building	Hammers*	Prerequisites	Effects
Stable	60	Horseback Riding <i>obsolete with Advanced Flight</i>	+2 XP for new Mounted Units
Stele Ethiopian unique (Monument)	30	Mysticism <i>obsolete with Astronomy</i>	+1 culture, +25% culture +1 happy with Charismatic trait
Stock Exchange English unique (Bank)	200	Banking	+65% gold
Supermarket	150	Refrigeration Grocer	+1 food +1 health from Cow, Deer, Pig, Sheep
Taoist Monastery	60	Meditation, Taoism <i>obsolete with Scientific Method</i>	+10% science, +2 culture
Taoist Pagoda 50% with Copper	300	Music, Taoism Taoist Temple (2)**	+50% culture, +1 happy with Incense +2 happy with Taoism as a State Religion can turn 2 Citizens into Priest
Taoist Temple	80	Priesthood Taoism	+1 culture, +1 happy can turn 1 Citizen into Priest
Terrace Incan unique (Granary)	60	Pottery	+1 health from Corn, Rice, Wheat +2 culture doubles city growth rate
Theatre	50	Drama	+3 culture, +1 happy from Dye +1 happy per 10% culture rate can turn 2 Citizens into Artist
Totem Pole Native American unique (Monument)	30	Mysticism <i>obsolete with Astronomy</i>	+1 culture +1 happy with Charismatic trait +3 XP for new Archery Units
Trading Post Viking unique (Lighthouse) <i>can only be built in coastal city</i>	60	Sailing	+1 food on water tiles Navigation I promotion for new Naval Units
University	200	Education Library	+25% science, +3 culture
Walls 50% with Stone	50	Masonry <i>obsolete with Rifling</i>	+50% defense (except Gunpowder Units) -50% damage from bombard. (except Gunpowder Units)
Ziggurat Sumerian unique (Courthouse)	90	Priesthood	+2 espionage -50% maintenance can turn 1 Citizen into Spy

* Assumes **Normal** Game Speed. Factors for other conditions are: **Quick** ×0.67, **Epic** ×1.50, **Marathon** ×3.00 (!)
Example: Stable on Epic will cost 90 hammers instead of 60

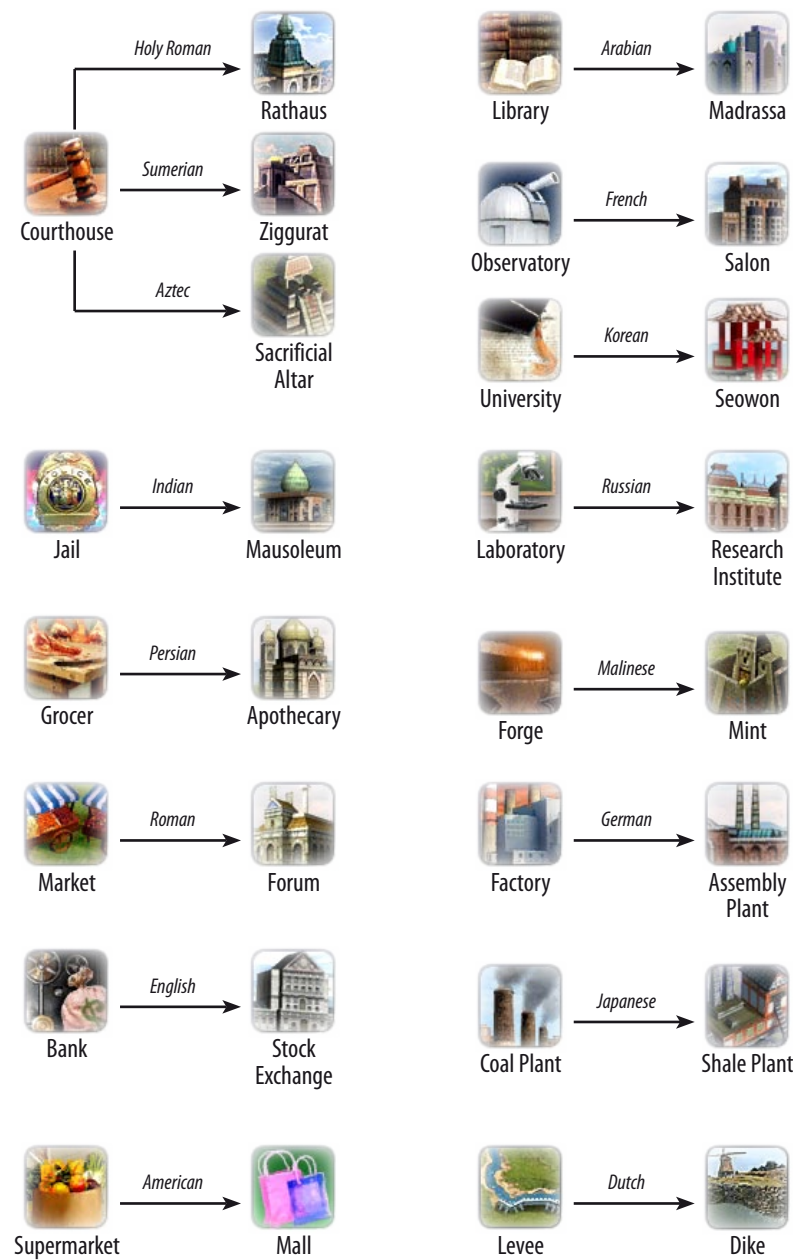
** Assumes **Duel** and **Tiny** Map Sizes. Factors for other conditions are: **Small** ×1.25, **Standard** ×1.50, **Large** ×1.75, **Huge** ×2.00
Example: Confucian Academy requires 3 Confucian Temples on Standard instead of 2



60 Upgrade cost (gold). Assumes **Normal** Game Speed. Factors for other conditions are: **Quick** × 0.67, **Epic** × 1.50, **Marathon** × 2.00. For calculating long-path upgrades just add all specified values. Also, at the end of calculations **you must add an additional upgrade cost which is 20 gold per unit** (all Game Speeds).
Example 1: Upgrading 2 Warriors to 2 Spearmans on Epic cost 220 gold – 2 units × (20 + (60 × 1.50)) = 2 units × 110 = 220.
Example 2: Upgrading 3 Horse Archers to 3 Cuirassiers on Marathon cost 960 gold – 3 units × (20 + ((120 + 30) × 2.00)) = 960.



* unique unit



Wonder	Hammers*	Prerequisites	Effects
 Palace	160	4 cities**	+8 commerce, +2 culture, +4 espionage, +1 happiness makes host city the capital reduces maintenance in nearby cities
 Forbidden Palace	200	8 cities** Courthouse (4)**	+4 culture, +1 Great People Birth Rate (<i>Great Spy</i>) reduces maintenance in nearby cities
 Globe Theatre	300	Drama Theatre (4)**	+6 culture, +1 Great People Birth Rate (<i>Great Artist</i>) no unhappiness in this city can turn 3 Citizens into <i>Artist</i>
 Hermitage <i>50% with Marble</i>	300	Nationalism	+100% culture +1 Great People Birth Rate (<i>Great Artist</i>)
 Heroic Epic <i>50% with Marble</i>	200	Literature, <i>Barracks</i> one level 4 military unit	+4 culture, +1 Great People Birth Rate (<i>Great Artist</i>) +100% military unit production
 Ironworks	700	Steel Forge (4)**	+50% hammers with <i>Iron</i> , +50% hammers with <i>Coal</i> +1 Great People Birth Rate (<i>Great Engineer</i>) +2 unhealthiness, can turn 3 Citizens into <i>Engineer</i>
 Moai Statues <i>50% with Stone</i>	250	Sailing	+4 culture, +1 Great People Birth Rate (<i>Great Prophet</i>) +1 hammer on water tiles
 Mt. Rushmore <i>50% with Stone</i>	500	Fascism	+4 culture, +1 Great People Birth Rate (<i>Great Artist</i>) -25% war weariness in all cities
 National Epic <i>50% with Marble</i>	250	Literature Library	+4 culture, +1 Great People Birth Rate (<i>Great Artist</i>) +100% Great People Birth Rate
 National Park	300	Biology	+3 culture, +1 Great People Birth Rate (<i>Great Scientist</i>) removes access to <i>Coal</i> from the city, no unhealthiness from population, 1 free <i>Specialist</i> per <i>Forest Preserve</i>
 Oxford University <i>50% with Stone</i>	400	Education University (4)**	+100% science, +4 culture +1 Great People Birth Rate (<i>Great Scientist</i>) can turn 3 Citizens into <i>Scientist</i>
 Red Cross	600	Medicine Hospital (4)**	+2 culture, +1 Great People Birth Rate (<i>Great Scientist</i>) free <i>Medic I</i> promotion for all new units built in this city
 Wall Street	600	Corporation Bank (4)**	+100% gold +1 Great People Birth Rate (<i>Great Merchant</i>) can turn 3 Citizens into <i>Merchant</i>
 West Point <i>50% with Stone</i>	800	Military Tradition one level 6 military unit	+1 Great People Birth Rate (<i>Great Spy</i>) +4 XP for all new units

* Assumes **Normal** Game Speed. See page 29 for more details.

** Assumes **Duel** and **Tiny** Map Sizes. See page 29 for more details.













Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Submarine Naval Unit	150	24 / 6 MP	Radio <i>Oil</i> or <i>Uranium</i>	3 cargo spaces (<i>Missiles</i>), can explore rival territory invisible to most units, can see submarines can move through impassable terrain can withdraw from combat (50% chance)
 Swordsman Melee Unit	40	6 / 1 MP	Iron Working <i>Iron</i>	+10% city attack
 Tactical Nuke Missile	250	0 / 1 MP / 4 R	Fission, Rocketry <i>Uranium</i> <i>Manhattan Proj.</i>	can nuke enemy lands can evade interception (50% chance)
 Tank Armored Unit	180	28 / 2 MP	Industrialism, Rifling <i>Oil</i>	doesn't receive defensive bonuses starts with <i>Blitz</i>
 Taoist Missionary National Unit	40	0 / 2 MP	<i>Taoism</i> <i>Taoist Monastery</i>	3 allowed** can spread <i>Taoism</i>
 Transport Naval Unit	125	16 / 5 MP	Combustion <i>Oil</i> or <i>Uranium</i>	4 cargo spaces
 Trebuchet Siege Weapon	80	4 / 1 MP +100% city attack	Engineering	doesn't receive defensive bonuses max. 75% damage to enemy, causes collateral damage immune to collateral damage from <i>Siege Weapons</i> can bombard city defenses (-16% per turn)
 Trireme Naval Unit	50	2 / 2 MP +50% vs. <i>Galley</i>	Metal Casting, Sailing	cannot enter Ocean
 Vulture Melee Unit Sumerian (Axeman)	35	6 / 1 MP +25% vs. <i>Melee</i>	Bronze Working <i>Copper</i> or <i>Iron</i>	—
 War Chariot Mounted Unit Egyptian (Chariot)	30	5 / 2 MP +100% attack vs. <i>Axeman</i>	Wheel <i>Horse</i>	immune to first strikes doesn't receive defensive bonuses can withdraw from combat (10% chance)
 War Elephant Mounted Unit	60	8 / 1 MP +50% vs. <i>Mounted</i>	Construction, Horseback Riding <i>Iron</i>	doesn't receive defensive bonuses
 Warrior Melee Unit	15	2 / 1 MP	—	+25% city defense
 Work Boat	30	0 / 2 MP	Fishing	cannot enter neutral Ocean tiles until <i>Astronomy</i> can create <i>Fishing Boats</i> , <i>Whaling Boats</i> and <i>Offshore Platform</i>
 Worker with food	60	0 / 2 MP	—	can build <i>tile improvements</i> +25% production speed for <i>Expansive Leaders</i> (hammers only)















MP movement points R operational range

* Assumes **Normal** Game Speed. Factors for other conditions are: **Quick** ×0.67, **Epic** ×1.50, **Marathon** ×2.00

Example: Longbowman on Epic will cost 75 hammers instead of 50













** number depends on map size *** bonus depends on map size and game length

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Quechua Melee Unit Incan (Warrior)	15	2 / 1 MP +100% vs. Archery	—	+25% city defense starts with Combat I
 Redcoat Gunpowder Unit English (Rifleman)	110	14 / 1 MP +25% vs. Mounted +25% vs. Gunpowder	Rifling	—
 Rifleman Gunpowder Unit	110	14 / 1 MP +25% vs. Mounted	Rifling	—
 SAM Infantry Gunpowder Unit	150	18 / 1 MP / 1 R +75% vs. Helicopter	Rocketry	can intercept aircraft (40% chance)
 Samurai Melee Unit Japanese (Maceman)	70	8 / 1 MP +50% vs. Melee	Civil Service, Machinery Iron	2 first strikes starts with Drill I
 Scout Recon Unit	15	1 / 2 MP +100% vs. Animals	Hunting	better results from Tribal Villages can only defend
 Settler	100 with food	0 / 2 MP	—	can found a new city +50% production speed for Imperialistic Leaders (hammers only)
 Ship of the Line Naval Unit	120	8 / 3 MP +50% vs. Frigate	Astronomy, Military Science Iron	can bombard city defenses (–12% per turn) bombardment ignores Walls and Castles
 Sid's Sushi Exec. National Unit	100	0 / 2 MP	—	can expand Sid's Sushi Co
 Skirmisher Archery Unit Malinese (Archer)	25	4 / 1 MP	Archery	1–2 first strikes 50% city defense 25% hills defense
 Spearman Melee Unit	35	4 / 1 MP +100% vs. Mounted	Hunting Copper or Iron	—
 Spy	40	0 / 1 MP	Alphabet	invisible to all units, can explore rival territory helps thwart rival spies starts with Commando
 Std Ethanol Exec. National Unit	100	0 / 2 MP	—	can expand Standard Ethanol
 Stealth Bomber Air Unit	200	20 / 1 MP / 12 MP –50% vs. Naval	Stealth, Robotics Aluminum and Oil	can evade interception (50% chance) causes collateral damage can destroy tile improvements can bombard city defenses (–20% per turn)
 Stealth Destroyer Naval Unit	250	30 / 8 MP	Stealth, Robotics Oil or Uranium	invisible to most units can see stealth ships can intercept aircraft (50% chance) can bombard city defenses (–16% per turn)

Special Building	Prerequisites	Effects	
 Academy <i>can only be built by Great Scientist</i>	—	+50% science, +4 culture	
 Military Academy <i>can only be built by Great General</i>	Military Science	+3 culture +50% military unit production	
 Scotland Yard <i>can only be built by Great Spy</i>	—	+100% espionage increases a chance of Great Spy appearing	
Project*	Hammers**	Prerequisites	Effects
 Apollo Program Team Project	1600 <i>50% with Aluminum</i>	Rocketry	allows Space Ship Parts production
 Space Ship Casing Team Project	1200 <i>50% with Aluminum</i>	Composites Apollo Program	1–5 required for Space Race Victory
 Space Ship Cockpit Team Project	1000 <i>50% with Copper</i>	Fiber Optics Apollo Program	1 required for Space Race Victory
 Space Ship Docking Bay Team Project	2000 <i>50% with Aluminum</i>	Satellites Apollo Program	1 required for Space Race Victory
 Space Ship Engine Team Project	1600	Fusion Apollo Program	1–2 required for Space Race Victory
 Space Ship Life Support Team Project	1000 <i>50% with Copper</i>	Ecology Apollo Program	1 required for Space Race Victory
 Space Ship Stasis Chamber Team Project	1200	Genetics Apollo Program	1 required for Space Race Victory
 Space Ship Thrusters Team Project	1200 <i>50% with Aluminum</i>	Superconductors Apollo Program	1–5 required for Space Race Victory
 Internet World Project	2000 <i>50% with Copper</i>	Computers	grants all technologies possessed by any 2 or more known civilizations
 Manhattan Project World Project	1500 <i>50% with Uranium</i>	Fission	enables Nuclear Attacks (for all players) enables Bomb Shelters (for all players)
 SDI Team Project	1500 <i>50% with Aluminum</i>	Laser Manhattan Project	+75% chance of intercepting ICBM and Tactical Nuke




* With the exception of SDI, all Team Projects require that Space Race victories be enabled.











** Assumes **Normal** Game Speed. See page 29 for more details.

Wonder	Hammers*	Prerequisites	Effects
	Angkor Wat 500 +8 culture <i>50% with Stone</i>	Philosophy <i>obsolete with Computers</i>	+2 Great People Birth Rate (Great Prophet) +1 hammer from Priest in all cities can turn 3 Citizens into Priest
	Apostolic Palace 400 +4 culture	Theology State Religion in city <i>obsolete with Mass Media</i>	+2 Great People Birth Rate (Great Prophet) triggers Apostolic Palace Global Elections guarantees eligibility for Diplomatic Votes <i>requires Diplomatic Victory enabled, 3+ teams</i>
	Broadway 800 +6 culture	Electricity	+2 Great People Birth Rate (Great Artist) +50% culture, +1 happy provides 5 Hit Musicals
	Chichen Itza 500 +6 culture <i>50% with Stone</i>	Code of Laws <i>obsolete with Rifling</i>	+2 Great People Birth Rate (Great Prophet) +25% defense in all cities
	Colossus 250 +6 culture <i>50% with Copper</i> <i>can only be built in coastal city</i>	Bronze Working Forge <i>obsolete with Astronomy</i>	+2 Great People Birth Rate (Great Merchant) +1 commerce on water tiles in all cities
	Cristo Redentor 1000 +5 culture	Radio	+2 Great People Birth Rate (Great Engineer) 1 turn Anarchy between Civic or Religion changes double production speed for Spiritual leaders
	Eiffel Tower 1250 +6 culture <i>50% with Iron</i>	Radio Forge	+2 Great People Birth Rate (Great Merchant) free Broadcast Tower in all cities
	Great Library 350 +8 culture <i>50% with Marble</i>	Literature Library <i>obsolete with Scientific Method</i>	+2 Great People Birth Rate (Great Scientist) 2 free Scientists
	Great Lighthouse 200 +6 culture <i>can only be built in coastal city</i>	Sailing, Masonry Lighthouse <i>obsolete with Corporation</i>	+2 Great People Birth Rate (Great Merchant) +2 Trade Routes in all coastal cities
	Great Wall 150 +2 culture <i>50% with Stone</i>	Masonry	+2 Great People Birth Rate (Great Spy) prevents Barbarians from entering borders +100% Great General Emergence inside cultural borders
	Hagia Sophia 500 +8 culture <i>50% with Marble</i>	Theology <i>obsolete with Steam Power</i>	+2 Great People Birth Rate (Great Engineer) Workers build improvements 50% faster
	Hanging Gardens 300 +6 culture <i>50% with Stone</i>	Mathematics Aqueduct	+2 Great People Birth Rate (Great Engineer) +1 health in all cities +1 population in all cities

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
	Missile Cruiser Naval Unit 260	40 / 7 MP	Robotics Oil or Uranium	4 cargo spaces (Missiles) causes collateral damage can bombard city defenses (-20% per turn)
	Mobile Artillery Siege Weapon 200	26 / 2 MP +50% vs. Siege	Laser, Artillery Oil	doesn't receive defensive bonuses max. 85% damage to enemy, causes collateral damage immune to collateral damage from Siege Weapons can bombard city defenses (-16% per turn)
	Mobile SAM Gunpowder Unit 220	22 / 2 MP / 1 R +50% vs. Helicopter	Laser Oil	can intercept aircraft (50% chance)
	Modern Armor Armored Unit 240	40 / 2 MP	Computers, Composites Aluminum and Oil	1 first strike doesn't receive defensive bonuses starts with Blitz
	Musketeer Gunpowder Unit 80 French (Musketman)	9 / 2 MP	Gunpowder	—
	Musketman Gunpowder Unit 80	9 / 1 MP	Gunpowder	—
	Navy SEAL Gunpowder Unit 160 America (Marine)	24 / 1 MP +50% attack vs. Machine Gun, Artillery	Industrialism, Rifling	1-2 first strikes starts with Amphibious and March
	Numidian Cavalry Mounted Unit 50 Carthaginian (Horse Archer)	5 / 2 MP +50% attack vs. Catapult, Trebuchet +50% vs. Melee	Horseback Riding, Archery Horse	immune to first strikes, doesn't receive defensive bonuses can withdraw from combat (20% chance) flank attack against Catapult and Trebuchet starts with Flanking I
	Oromo Warrior Gunpowder Unit 80 Ethiopian (Musketman)	9 / 1 MP	Gunpowder	1 first strike immune to first strikes starts with Drill I and Drill II
	Panzer Armored Unit 180 German (Tank)	28 / 2 MP +50% vs. Armored	Industrialism, Rifling Oil	doesn't receive defensive bonuses starts with Blitz
	Paratrooper Gunpowder Unit 160	24 / 1 MP	Fascism, Rifling, Flight	can perform paratroops (5 range) can evade interception (25% chance)
	Phalanx Melee Unit 35 Greek (Axeman)	5 / 1 MP +50% vs. Melee +100% def. vs. Chariot	Bronze Working Copper or Iron	—
	Pikeman Melee Unit 60	6 / 1 MP +100% vs. Mounted	Engineering Iron	—
	Praetorian Melee Unit 45 Roman (Swordsman)	8 / 1 MP	Iron Working Iron	—
	Privateer Naval Unit 80	6 / 4 MP	Chemistry, Astronomy	hidden nationality can attack / blockade without declaring war starts with Sentry

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Ironclad Naval Unit	100	12 / 2 MP	Steam Power, Steel Iron and Coal	cannot enter Ocean can bombard city defenses (-12% per turn)
 Islamic Missionary National Unit	40	0 / 2 MP	Islam Islamic Monastery	3 allowed** can spread Islam
 Jaguar Melee Unit Aztec (Swordsman)	35	5 / 1 MP	Iron Working	+10% city attack starts with Woodsman I
 Janissary Gunpowder Unit Ottoman (Musketman)	80	9 / 1 MP +25% vs. Archery , Mounted , Melee	Gunpowder	—
 Jet Fighter Air Unit	150	24 / 1 MP / 10 R	Advanced Flight Aluminum and Oil	can intercept aircraft (100% chance) can destroy tile improvements can bombard city defenses (-12% per turn) no XP for shooting down units that cannot defend
 Jewish Missionary National Unit	40	0 / 2 MP	Judaism Jewish Monastery	3 allowed** can spread Judaism
 Keshik Mounted Unit Mongolian (Horse Archer)	50	6 / 2 MP +50% attack vs. Catapult , Trebuchet	Horseback Riding, Archery Horse	doesn't receive defensive bonuses 1 first strike, ignores terrain movement costs can withdraw from combat (20% chance) flank attack against Catapult and Trebuchet
 Knight Mounted Unit	90	10 / 2 MP	Guilds, Horseback Riding Horse and Iron	immune to first strikes doesn't receive defensive bonuses flank attack against Catapult and Trebuchet
 Landsknecht Melee Unit Holy Roman (Pikeman)	60	6 / 1 MP +100% vs. Mounted +100% vs. Melee	Engineering Iron	—
 Longbowman Archery Unit	50	6 / 1 MP	Feudalism, Archery	1 first strike +25% city defense +25% hills defense
 Maceman Melee Unit	70	8 / 1 MP +50% vs. Melee	Civil Service, Machinery Copper or Iron	—
 Machine Gun Gunpowder Unit	125	18 / 1 MP +50% vs. Gunpowder	Railroad	can only defend 1 first strike immune to collateral damage from Siege Weapons
 Marine Gunpowder Unit	160	24 / 1 MP +50% attack vs. Machine Gun , Artillery	Industrialism, Rifling	starts with Amphibious
 Mech. Infantry Gunpowder Unit	200	32 / 2 MP	Robotics, Rifling	starts with March
 Mining Inc. Exec. National Unit	100	0 / 2 MP	—	can expand Mining Inc

Wonder	Hammers*	Prerequisites	Effects
 Hollywood	1000	Mass Media	+2 Great People Birth Rate (Great Artist) +50% culture, +1 happy provides 5 Hit Movies
 Kremlin	800 <i>50% with Stone</i>	Communism <i>obsolete with Fiber Optics</i>	+2 Great People Birth Rate (Great Spy) -33% hurry production cost can turn 2 Citizens into Spy
 Mausoleum of Maussollos	450 <i>50% with Marble</i>	Calendar	+2 Great People Birth Rate (Great Artist) +50% Golden Age length
 Notre Dame	550 <i>50% with Stone</i>	Engineering	+2 Great People Birth Rate (Great Artist) +2 happy in all cities on the same continent
 Oracle	150 <i>50% with Marble</i>	Priesthood	+2 Great People Birth Rate (Great Prophet) 1 free technology
 Parthenon	400 <i>50% with Marble</i>	Polytheism Aesthetics <i>obsolete with Scientific Method</i>	+2 Great People Birth Rate (Great Artist) +50% Great People Birth Rate in all cities
 Pentagon	1250	Assembly Line	+2 Great People Birth Rate (Great Spy) +2 XP for all new units in all cities
 Pyramids	500 <i>50% with Stone</i>	Masonry	+2 Great People Birth Rate (Great Engineer) enables all Government Civics
 Rock 'n' Roll	800	Radio	+2 Great People Birth Rate (Great Artist) +50% culture +1 happy provides 5 Hit Singles
 Shwedagon Paya	450 <i>50% with Gold</i>	Meditation Aesthetics	+2 Great People Birth Rate (Great Prophet) enables all Religion Civics
 Sistine Chapel	600 <i>50% with Marble</i>	Music	+2 Great People Birth Rate (Great Artist) +2 culture per Specialist in all cities +5 culture from all State Religion buildings
 Space Elevator	2000 <i>50% with Aluminum</i>	Satellites, Robotics	+2 Great People Birth Rate (Great Scientist) +50% spaceship production in all cities <i>requires Space Race Victory enabled</i>

Wonder	Hammers*	Prerequisites	Effects
	Spiral Minaret 550 +8 culture <i>50% with Stone</i>	Divine Right <i>obsolete with Computers</i>	+2 Great People Birth Rate (Great Prophet) +2 gold from all State Religion buildings
	Statue of Liberty 1500 +6 culture <i>50% with Copper</i>	Democracy Forge	+2 Great People Birth Rate (Great Merchant) 1 free Specialist in all cities on continent
	Statue of Zeus 300 +10 culture <i>50% with Ivory</i>	Aesthetics Monument (2)**	+2 Great People Birth Rate (Great Artist) enemies suffer +100% war weariness
	Stonehenge 120 +8 culture <i>50% with Stone</i>	Mysticism <i>obsolete with Astronomy</i>	+2 Great People Birth Rate (Great Prophet) free Monument in all cities centers World Map
	Taj Mahal 700 +10 culture <i>50% with Marble</i>	Nationalism	+2 Great People Birth Rate (Great Artist) starts Golden Age
	Temple of Artemis 350 +8 culture <i>50% with Marble</i>	Polytheism <i>obsolete with Scientific Method</i>	+2 Great People Birth Rate (Great Merchant) 1 free Priest Trade Route yields doubled in host city
	Three Gorges Dam 1750 <i>can only be built in river city</i>	Plastics	+2 Great People Birth Rate (Great Engineer) provides Power for all cities on continent
	University of Sankore 550 +8 culture <i>50% with Stone</i>	Paper <i>obsolete with Computers</i>	+2 Great People Birth Rate (Great Scientist) +2 beakers from all State Religion buildings
	United Nations 1000	Mass Media	+2 Great People Birth Rate (Great Merchant) triggers United Nations Global Elections guarantees eligibility for Diplomatic Votes <i>requires Diplomatic Victory enabled, 3+ teams</i>
	Versailles 800 +10 culture <i>50% with Marble</i>	Divine Right	+2 Great People Birth Rate (Great Merchant) reduces maintenance in nearby cities

* Assumes costs given apply only to a **Normal** Game Speed. See page 29 for more details.



** Assumes **Duel** and **Tiny** Map Sizes. See page 29 for more details.

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
	Great Merchant Great Person	0 / 2 MP	—	can start a Golden Age, can discover a Technology can conduct a trade mission, can explore rival territory can join city as Great Merchant can construct Cereal Mills and Sid's Sushi Co
	Great Prophet Great Person	0 / 2 MP	—	can start a Golden Age, can discover a Technology can join city as Great Prophet , can construct Church of the Nativity , Dai Miao , Kashi Vishwanath , Kong Miao , Mahabodhi , Masjid al-Haram , Temple of Solomon
	Great Scientist Great Person	0 / 2 MP	—	can start a Golden Age, can discover a Technology can join city as Great Scientist can construct Academy , Aluminum Co and Standard Ethanol
	Great Spy Great Person	0 / 2 MP	—	can start a Golden Age, invisible to all units can infiltrate another player's city (+3000 espionage)** can join city as Great Spy can construct Scotland Yard
	Grenadier Gunpowder Unit	12 / 1 MP +50% attack vs. Rifleman	Military Science	—
	Guided Missile Missile	60	40 / 1 MP / 4 R	Rocketry, Radio can evade interception (100% chance) can destroy tile improvements can bombard city defenses (–16% per turn)
	Gunship Helicopter Unit	160	24 / 4 MP +50% vs. Armored	Advanced Flight Oil cannot capture enemy cities or units, doesn't receive defensive bonuses, ignores terrain movement costs can withdraw from combat (25% chance) flank attack against Artillery and Mobile Artillery
	Hindu Missionary National Unit	40	0 / 2 MP	Hinduism Hindu Monastery 3 allowed** can spread Hinduism
	Holkan Melee Unit Maya (Spearman)	35	4 / 1 MP +50% vs. Mounted	Bronze Working, Hunting immune to first strikes
	Horse Archer Mounted Unit	50	6 / 2 MP +50% attack vs. Catapult , Trebuchet	Horseback Riding, Archery Horse immune to first strikes doesn't receive defensive bonuses can withdraw from combat (20% chance) flank attack against Catapult and Trebuchet
	Hwacha Siege Weapon Korean (Catapult)	50	5 / 1 MP +50% vs. Melee	Construction doesn't receive defensive bonuses max. 75% damage to enemy, causes collateral damage immune to collateral damage from Siege Weapons can bombard city defenses (–8% per turn)
	ICBM Nuclear Missile	500	global range	Fission, Rocketry Uranium Manhattan Proj. can nuke enemy lands
	Immortal Mounted Unit Persian (Chariot)	30	4 / 2 MP +100% att. vs. Axeman +50% vs. Archery	Wheel Horse can withdraw from combat (10% chance)
	Impi Melee Unit Zulu (Spearman)	35	4 / 2 MP +50% vs. Mounted	Hunting Copper or Iron starts with Mobility
	Infantry Gunpowder Unit	140	20 / 1 MP +25% vs. Gunpowder	Assembly Line, Rifling

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Crossbowman Archery Unit	60	6 / 1 MP +50% vs. Melee	Machinery, Archery Iron	1 first strike
 Cuirassier Mounted Unit	100	12 / 2 MP	Gunpowder, Military Tradition, Horseback Riding Horse and Iron	immune to first strikes doesn't receive defensive bonuses can withdraw from combat (15% chance) flank attack against Cannon
 Destroyer Naval Unit	200	30 / 8 MP	Combustion Oil or Uranium	can see Submarines can intercept aircraft (30% chance) can bombard city defenses (–16% per turn)
 Dog Soldier Melee Unit Native American (Axeman)	35	4 / 1 MP +100% vs. Melee	Bronze Working	—
 East Indiaman Naval Unit Dutch (Galleon)	80	6 / 4 MP	Astronomy	4 cargo spaces can explore rival territory bombardment ignores Walls and Castles
 Explorer Recon Unit	40	4 / 2 MP	Compass	better results from Tribal Villages can only defend ignores terrain movement costs starts with Guerilla I and Woodsman I
 Fast Worker Indian (Worker) with food	60	0 / 3 MP	—	can build tile improvements +25% production speed for Expansive Leaders (hammers only)
 Fighter Air Unit	100	12 / 1 MP / 6 R	Flight Oil	can intercept aircraft (100% chance) can destroy tile improvements can bombard city defenses (–8% per turn) no XP for shooting down units that cannot defend
 Frigate Naval Unit	90	8 / 4 MP	Chemistry, Astronomy Iron	can bombard city defenses (–8% per turn) bombardment ignores Walls and Castles
 Galleon Naval Unit	80	4 / 4 MP	Astronomy	3 cargo spaces
 Galley Naval Unit	50	2 / 2 MP	Sailing	2 cargo spaces cannot enter Ocean
 Gallic Warrior Melee Unit Celtic (Swordsman)	40	6 / 1 MP	Iron Working Copper or Iron	+10% city attack starts with Guerilla I
 Great Artist Great Person	0 / 2 MP	—	—	can start a Golden Age, can discover a Technology can create a Great Work (+4000 culture)*** can join city as Great Artist can construct Civilized Jewelers Inc
 Great Engineer Great Person	0 / 2 MP	—	—	can start a Golden Age, can discover a Technology can hurry production can join city as Great Engineer can construct Creative Constructions and Mining Inc
 Great General Great Person	0 / 2 MP	—	—	can provide 20 XP to units in the same tile can attach to unit and allows free upgrades can join city as Great Military Instructor can construct Military Academy

Religion	Shrine	Effects
 Buddhism • founded by first to discover Meditation	 Mahabodhi	All Shrines can only be built by Great Prophets, and only in the respective Holy City.
 Christianity • founded by first to discover Theology • 1 free Christian Missionary	 Church of the Nativity	
 Confucianism • founded by first to discover Code of Laws • 1 free Confucian Missionary	 Kong Miao	
 Hinduism • founded by first to discover Polytheism	 Kashi Vishwanath	
 Islam • founded by first to discover Divine Right • 1 free Islamic Missionary	 Masjid al-Haram	All Religion Shrines: +4 culture +1 Great People Birth Rate (Great Prophet) +1 gold per city with its Religion spread its Religion can turn 3 Citizen into Priest
 Judaism • founded by first to discover Monotheism	 Temple of Solomon	
 Taoism • founded by first to discover Philosophy • 1 free Taoist Missionary	 Dai Miao	
Corporation*	Requirements and Production	Competes with
 Aluminum Co can only be built by Great Scientist requires: Corporation, Rocketry	consumes Coal generates Aluminum all cities: +3 beakers per resource consumed	Mining Inc
 Cereal Mills can only be built by Great Merchant requires: Corporation, Refrigeration	consumes: Wheat, Corn, Rice all cities: +0.75 food per resource consumed	Sid's Sushi Co Standard Ethanol
 Civilized Jewelers Inc can only be built by Great Artist requires: Corporation, Mass Media	consumes: Gold, Silver, Gems all cities: +1 gold and +4 culture per resource consumed	Mining Inc
 Creative Constructions can only be built by Great Engineer requires: Corporation, Combustion	consumes: Iron, Copper, Marble, Stone, Aluminum all cities: +0.5 hammer and +3 culture per resource consumed	Mining Inc
 Mining Inc can only be built by Great Engineer requires: Corporation, Railroad	consumes: Coal, Iron, Copper, Gold, Silver all cities: +1 hammer per resource consumed	Creative Constructions Aluminum Co Civilized Jewelers Inc
 Sid's Sushi Co can only be built by Great Merchant requires: Corporation, Medicine	consumes: Crab, Clam, Fish, Rice all cities: +0.5 food and +2 culture per resource consumed	Cereal Mills Standard Ethanol
 Standard Ethanol can only be built by Great Scientist requires: Corporation, Plastics	consumes: Corn, Sugar, Rice generates Oil all cities: +2 beakers per resource consumed	Cereal Mills Sid's Sushi Co

* Each Corporation HQ generates +2 culture, +1 Great People Birth Rate, and +4 gold per corporate branch office.

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Airship Air Unit	80	4 / 1 MP / 8 R +100% vs. Naval	Physics	can see Submarines
 Alumco Exec. National Unit	100	0 / 2 MP	—	can expand Aluminum Co
 Anti-Tank Gunpowder Unit	120	14 / 1 MP +100% vs. Armored	Artillery	starts with Ambush
 Archer Archery Unit	25	3 / 1 MP	Archery	1 first strike +50% city defense +25% hills defense
 Artillery Siege Weapon	150	18 / 1 MP +50% vs. Siege	Artillery	doesn't receive defensive bonuses max. 85% damage to enemy, causes collateral damage immune to collateral damage from Siege Weapons can bombard city defenses (–16% per turn)
 Attack Submarine Naval Unit	180	30 / 7 MP +50% vs. Subs	Rocketry, Radio, Combustion Uranium	1 cargo space (Scouts, Explorers, Missionaries, Spies, GP) invisible for most units, can see Submarines can move through impassable terrain can explore rival territory, 50% withdraw chance
 Axeman Melee Unit	35	5 / 1 MP +50% vs. Melee	Bronze Working Copper or Iron	—
 Ballista Elephant Mounted Unit Khmer (War Elephant)	60	8 / 1 MP +50% vs. Mounted	Construction, Horseback Riding Ivory	doesn't receive defensive bonuses targets Mounted Units first in combat outside cities
 Battleship Naval Unit	225	40 / 6 MP	Industrialism Oil or Uranium	causes collateral damage can bombard city defenses (–20% per turn)
 Berserker Melee Unit Viking (Maceman)	70	8 / 1 MP +50% vs. Melee	Civil Service, Machinery Copper or Iron	+10% city attack starts with Amphibious
 Bomber Air Unit	140	16 / 1 MP / 8 R –50% vs. Water	Radio, Flight Oil	causes collateral damage can destroy tile improvements can bombard city defenses (–16% per turn)
 Bowman Archery Unit Babylonian (Archer)	25	3 / 1 MP +50% vs. Melee	Archery	1 first strike +50% city defense +25% hills defense
 Buddhist Missionary National Unit	40	0 / 2 MP	Buddhism Buddhist Monastery	3 allowed** can spread Buddhism
 Camel Archer Mounted Unit Arabian (Knight)	90	10 / 2 MP	Guilds, Archery, Horseback Riding	immune to first strikes doesn't receive defensive bonuses can withdraw from combat (15% chance) flank attack against Catapult and Trebuchet
 Cannon Siege Weapon	100	12 / 1 MP	Steel Iron	doesn't receive defensive bonuses max. 80% damage to enemy, causes collateral damage immune to collateral damage from Siege Weapons can bombard city defenses (–12% per turn)

Unit	Hammers*	Str./Movement	Prereq.	Special abilities
 Caravel Naval Unit	60	3 / 3 MP	Optics	1 cargo space (Scouts, Explorers, Missionaries, Spies, Great People) can explore rival territory
 Carrack Naval Unit Portuguese (Caravel)	60	3 / 3 MP	Optics	2 cargo spaces can explore rival territory
 Carrier Naval Unit	175	16 / 5 MP	Industrialism Oil or Uranium	3 cargo spaces (Fighters)
 Cataphract Mounted Unit Byzantine (Knight)	90	12 / 2 MP	Guilds, Horseback Riding Horse and Iron	doesn't receive defensive bonuses flank attack against Catapult and Trebuchet
 Catapult Siege Weapon	50	5 / 1 MP	Construction	doesn't receive defensive bonuses max. 75% damage to enemy, causes collateral damage immune to collateral damage from Siege Weapons can bombard city defenses (–8% per turn)
 Cavalry Mounted Unit	120	15 / 2 MP +50% attack vs. Cannon	Rifling, Military Tradition, Horseback Riding Horse	doesn't receive defensive bonuses can withdraw from combat (30% chance) flank attack against Cannon
 Cereal Mills Exec. National Unit	100	0 / 2 MP	—	can expand Cereal Mills
 Chariot Mounted Unit	30	4 / 2 MP +100% attack vs. Axeman	Wheel Horse	doesn't receive defensive bonuses can withdraw from combat (10% chance)
 Cho-Ko-Nu Archery Unit Chinese (Crossbowman)	60	6 / 1 MP +50% vs. Melee	Machinery, Archery Iron	2 first strikes causes collateral damage
 Christian Missionary National Unit	40	0 / 2 MP	Christianity Christian Monastery	3 allowed** can spread Christianity
 Civ Jewels Exec. National Unit	100	0 / 2 MP	—	can expand Civilized Jewelers Inc
 Confucian Missionary National Unit	40	0 / 2 MP	Confucianism Confucian Monastery	3 allowed** can spread Confucianism
 Conquistador Mounted Unit Spanish (Cuirassier)	100	12 / 2 MP +50% vs. Melee	Gunpowder, Military Tradition, Horseback Riding Horse and Iron	immune to first strikes can withdraw from combat (15% chance) flank attack against Cannon
 Cossack Mounted Unit Russian (Cavalry)	120	15 / 2 MP +50% att. vs. Cannon +50% vs. Mounted	Rifling, Military Tradition, Horseback Riding Horse	doesn't receive defensive bonuses can withdraw from combat (30% chance) flank attack against Cannon
 CreateCon Exec. National Unit	100	0 / 2 MP	—	can expand Creative Constructions