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Customize sheets for:

Gamespeed	Normal	▼
Difficulty	Noble	▼
Worldsize	Duel	▼

*Standard customization (Normal, Noble, Duel)

Changelog

Version	Date	Notes
v1.0	30-nov-05	kroym creates
v1.1	22-dec-05	friskymike adds autofilter to Civ Characteristic, Buildings & Wonders, fix some hyperlinks, add Hotkeys & Combat Calculator placeholders
v1.2	22-dec-05	micelangelo's tech chart v2 included
v1.3	22-dec-05	kroym adds hotkey list
v1.31	27-dec-05	kroym makes some changes based on v1.52 patch
v1.32	29-dec-05	Michelangelo updates tech cost based on v1.52 patch
v1.4	30-dec-05	kroym integrated Michelangelo's (tech tree, v1.52 tech advance costs) & kflorian's work (Added column filters, added to aesthetics of pages)
v1.41	4-jan-06	Michelangelo adds automatic coloring for filter columns (VBA, So enable macro's at startup for full functionality)
v1.52	19-mrt-06	Michelangelo combines forum additions/suggestions + finish tech chart + cleanup
v1.6	14-apr-06	kroYM adds sorting to Wonders chart, updated changes per v1.61 patch, various "readability/aesthetic" tweaks
v1.6a	7-jun-06	Michelangelo adds gamemodifier-functionality first implemented by _alphaBeta. (Selection on Title page) & Game modifiers to Civics page (due to room available)
v1.6b	10-aug-06	Jensen adds new Warlords expansions' elements
v1.61+W	17-aug-06	Michelangelo updates tech flowchart for warlords, implemented modifier-based cost for units + upgrades(are now correct), partly update promotion chart, aesthetics

To Do List

Add reference to buildings that have prerequisite depending on G/D/W settings (f.i. # temples required for cathedral)

Add Promotions for units lead by warlord.

Keyboard Mouse Shortcuts

General	
P	Ping the map
Alt + D	Change player name/email
Alt + F	Satellite view
Alt + I	Remove interface
Alt + O	Change perspective
Alt + Q	Retire (give up)
Alt + W	Access Worldbuilder
Alt + S	Place signs
Ctrl + B	Toggle bare map on/off
Ctrl + C	Set all units of same type as active
Ctrl + F	Flying camera mode (enable in INI file)
Ctrl + I	Minimize interface
Ctrl + L	Load game
Ctrl + M	Turn music on/off
Ctrl + O	Options menu
Ctrl + R	Flag resources on/off
Ctrl + S	Save game
Ctrl + T	Turn grid on/off
Ctrl + Y	Turn tile yields on/off
Ctrl + Tab	Chat/Event Log
Ctrl + Left arrow	Lock camera angle 45° CW
Ctrl + Right arrow	Lock camera angle 45° CCW
Shift + D	Contact Civ popup
Shift + Enter	Force turn to end
Shift + Left Arrow	Rotate camera CW
Shift + Right Arrow	Rotate camera CCW
Shift + Tab	Chat to all
Shift + F5	Quick save (Single player only)
Shift + F8	Quick load (Single player only)
Enter	Cycle units, end turn
\	Cycle to previous unit
Esc	Exit current screen/open menu
, (comma)	Cycle to previous unit (same tile)
. (period)	Cycle to next unit (same tile)
/	Cycle through active workers
Home, End	Cycle through cities
Insert	Open nearest friendly city screen
Page Down	Zoom camera out
Page Up	Zoom camera in
Pause	Pause game – pauses turn timer
Print Screen	Take Screenshot
Tab	Chat to team
Scroll Lock	Voice chat to team
Shift + Scroll Lock	Voice chat to all
Ctrl + Scroll Lock	Voice chat in Diplomacy screen

Units	
B	Bombard
B	Build City (Settler)
C	Center on unit
E	Explore
F	Fortify
G	Go-to mode
I	Intercept
L	Load (onto ship)
S	Sentry (wake for enemy)
U	Unload (from ship)
W	Wait (move later in turn)
Alt + Click	Group all units together
Ctrl + (#)	Bind selected group or unit to number
Ctrl + Click	Group same type together
Shift + Click	Tile context menu
Shift + P	Pillage
Space	Skip turn for unit
Delete	Delete unit
Numpad 5	Center on unit
Numpad arrows	Use numpad to move units

Advisors	
F1	Domestic Advisor
F2	Financial Advisor
F3	Civics Advisor
F4	Foreign Advisor
F5	Military Advisor
F6	Technology Advisor
F7	Religion Advisor
F8	Victory Status
F9	Demographics
F10	Capital City
F11	Globe View
F12	Civilopedia

Work Boats	
F	Build fishing nets
O	Build offshore platform
Shift + W	Build whaling boats

Air Units	
B	Air bomb mode (cities/tiles)
R	Recon mode
S	Air strike mode (enemy units)
Alt + R	Rebase

City Screen	
Enter	Exit city screen
Alt + add item to build queue	Build item indefinitely
Ctrl + add item to build queue	Add to beginning of queue
Shift + add item to build queue	Add item to end of queue
Ctrl + (#)	Save a production queue. Load w/same key
Insert	Open nearest friendly city screen
Middle mouse button	Exit city screen
Numpad arrows	Cycle through cities
Click "Fwd", "Back" buttons on mouse to cycle through cities	

Mouse Shortcuts	
Alt + click on city bar	Select all player's cities
Alt + click on Civ in score display	Declare war on that Civ
Alt + right-click a tile	Move all units from same tile to selected tile
Ctrl + click on city bar	Select all cities on same continent
Ctrl + click on Civ in score display	Open trade window with that Civ
Ctrl + roll mouse wheel	Cycle units on tile
Shift + click any city bars	Select multiple cities (to change production)
Shift + right-click any city bars	Set rally point for multiple cities
Shift + click on city bars	select those cities to change queue
Shift + click any tile	Open context menu for that tile
Shift + Rt. Click city bars	Set rally point for those cities
Roll mouse wheel	Zoom in/out
Click + hold left & right mouse buttons on map to drag it	
Click, + hold right mouse button over enemy for combat odds	
Click any tile to center the map on that tile	
Click "Forward" and "Back" buttons on mouse to cycle through units on the same tile	

Worker Commands	
A	Automate
H	Build camp
I	Build farm (irrigate)
K	Build workshop
L	Build lumbermill
M	Build mine
N	Build trade network
Q	Build quarry
R	Build road/railroad
T	Build cottage
Alt + C	Remove forest/jungle
Alt + R	Road-to mode
Ctrl + F	Build fort
Shift + Ctrl + C	Improve nearest city
Shift + P	Build pasture/plantation
Shift + W	Build watermill (river), windmill (hill), winery (wine), well (oil)

Civics

Civic Type & Name

Government	Upkeep Cost	Req'd Tech	Focus	Effects/Benefits
Despotism	Low	None		None
Hereditary Rule	Low	Monarchy	Military	+1 happy face per military unit in city
Representation	Medium	Constitution	Research	+3 beakers per specialist, +2 happy faces in Civ's 5 largest cities
Police State	High	Fascism	Military	+25% military unit production cost, -50% war weariness
Universal Suffrage	Medium	Democracy	Production	+1 production from towns, can spend commerce to finish production
Legal	Upkeep Cost	Req'd Tech	Focus	Effects/Benefits
Barbarism	Low	None		None
Vassalage	High	Feudalism	Military	New units start with +2 experience points, lower unit support costs
Bureaucracy	Medium	Civil Service	Production	+50% commerce in capital & +50% production
Nationhood	None	Nationalism	Military	Can draft 3 units per turn, +2 happy faces per barracks
Free Speech	Low	Liberalism	Culture	+2 commerce from towns, +100% culture in all cities
Labor	Upkeep Cost	Req'd Tech	Focus	Effects/Benefits
Tribalism	Low	None		None
Slavery	Low	Bronze Working	Production	Can sacrifice population to finish production
Serfdom	Low	Feudalism	Production	Workers build improvements 50% faster
Caste System	Medium	Code of Laws	Specialists	Unlimited Artists, Scientists, & Merchants
Emancipation	None	Democracy	Commerce	+100% growth for cottages, hamlets, & villages, unhappiness penalty for Civs without Emancipation
Economy	Upkeep Cost	Req'd Tech	Focus	Effects/Benefits
Decentralization	Low	None		None
Mercantilism	Medium	Banking	Specialists	+1 free specialist per city, no foreign trade routes
Free Market	Medium	Economics	Trade	+1 trade routes per city
State Property	Low	Communism	Commerce & Food	No maintenance costs due to distance from capital, +1 food from workshops & watermills
Environmentalism	Medium	Medicine	Heath & Happiness	+6 health in all cities, +1 happy face from jungles & forests
Religion	Upkeep Cost	Req'd Tech	Focus	Effects/Benefits
Paganism	Low	None		None
Organized Religion	High	Monotheism	Production	Build missionaries without monastery, production speed of buildings +25% in cities with state religion
Theocracy	Medium	Theology	Military	+2 experience points to units built in cities w/state religion, no non-state religion spreading within Civ
Pacifism	None	Philosophy	Great People	+100% great person birth rate in cities with state religion, +1 commerce support cost per military unit
Free Religion	Low	Liberalism	Happiness & Research	No state religion, +1 happy face per religion in each city, +10% research in all cities

Game modifiers (Standard = Normal/Noble/Duel)	
Speed	Technology & Building & Units
Quick	0,67
Normal	1,0
Epic	1,5
Marathon	3,0
Difficulty	Technology
Settler	0,6
Chieftain	0,75
Warlord	0,9
Noble	1
Prince	1,1
Monarch	1,15
Emperor	1,2
Immortal	1,25
Deity	1,3
Worldsize	Technology
Duel	1,0
Tiny	1,1
Small	1,2
Standard	1,3
Large	1,4
Huge	1,5

Civilization Characteristics

Civilization	Active	Leader	Trait 1	Trait 2	Favored Civic	Unique Unit	Tech. 1	Tech. 2	Trait Benefits
America		George Washington	Financial	Organized	Universal Suffrage	Navy SEAL	Fishing	Agriculture	+1 commerce on tiles w/2 commerce. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
		Franklin D. Roosevelt	Industrious	Organized	Universal Suffrage	Navy SEAL	Fishing	Agriculture	Wonder production increased 50%. 2X production speed of forge. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Arabs		Saladin	Philosophical	Spiritual	Theocracy	Camel Archer	Mysticism	The Wheel	Great People birth rate increased 100%. 2X production speed of university. No anarchy. 2X production speed of temple.
Aztecs		Montezuma	Aggressive	Spiritual	Police State	Jaguar	Mysticism	Hunting	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. No anarchy. 2X production speed of temple.
China		Mao Zedong	Philosophical	Organized	State Property	Cho-Ku-Nu	Agriculture	Mining	Great People birth rate increased 100%. 2X production speed of university. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
		Qin Shi Huang	Industrious	Financial	Police State	Cho-Ku-Nu	Agriculture	Mining	Wonder production increased 50%. 2X production speed of forge. +1 commerce on tiles w/2 commerce.
Egypt		Hatshepsut	Spiritual	Creative	Hereditary Rule	War Chariot	Agriculture	The Wheel	No anarchy. 2X production speed of temple. +2 culture/city. 2X production speed theaters, coliseum.
England		Victoria	Expansive	Financial	Representation	Redcoat	Fishing	Mining	+3 health/city. 2X production speed granary, harbor. +1 commerce on tiles w/2 commerce.
		Elizabeth	Philosophical	Financial	Free Religion	Redcoat	Fishing	Mining	Great People birth rate increased 100%. 2X production speed of university. +1 commerce on tiles w/2 commerce.
France		Louis XIV	Creative	Industrious	Hereditary Rule	Musketeer	Agriculture	The Wheel	+2 culture/city. 2X production speed theaters, coliseum. Wonder production increased 50%. 2X production speed of forge.
		Napoleon	Aggressive	Industrious	Representation	Musketeer	Agriculture	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. Wonder production increased 50%. 2X production speed of forge.
Germany		Frederick	Creative	Philosophical	Universal Suffrage	Panzer	Hunting	Mining	+2 culture/city. 2X production speed theaters, coliseum. Great People birth rate increased 100%. 2X production speed of university.
		Bismarck	Expansive	Industrious	Representation	Panzer	Hunting	Mining	+3 health/city. 2X production speed granary, harbor. Wonder production increased 50%. 2X production speed of forge.
Greece		Alexander	Aggressive	Philosophical	Hereditary Rule	Phalanx	Fishing	Hunting	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. Great People birth rate increased 100%. 2X production speed of university.
Inca		Huayna Capac	Aggressive	Financial	Hereditary Rule	Quechua	Agriculture	Mysticism	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +1 commerce on tiles w/2 commerce.
India		Mahatma Gandhi	Industrious	Spiritual	Universal Suffrage	Fast Worker	Mysticism	Mining	Wonder production increased 50%. 2X production speed of forge. No anarchy. 2X production speed of temple.
		Asoka	Organized	Spiritual	Universal Suffrage	Fast Worker	Mysticism	Mining	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse. No anarchy. 2X production speed of temple.
Japan		Tokugawa	Aggressive	Organized	Mercantilism	Samurai	Fishing	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Mali		Mansa Musa	Financial	Spiritual	Free Markets	Skirmisher	Mining	The Wheel	+1 commerce on tiles w/2 commerce. No anarchy. 2X production speed of temple.
Mongolia		Genghis Khan	Aggressive	Expansive	Police State	Keshik	Hunting	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +3 health/city. 2X production speed granary, harbor.
		Kublai Khan	Aggressive	Creative	Hereditary Rule	Keshik	Hunting	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +2 culture/city. 2X production speed theaters, coliseum.
Persia		Cyrus	Expansive	Spiritual	Representation	Immortal	Agriculture	Hunting	+3 health/city. 2X production speed granary, harbor. No anarchy. 2X production speed of temple.
Rome		Julius Caesar	Organized	Expansive	Representation	Praetorian	Fishing	Mining	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse. +3 health/city. 2X production speed granary, harbor.
Russia		Catherine	Creative	Financial	Hereditary Rule	Cossack	Hunting	Mining	+2 culture/city. 2X production speed theaters, coliseum. +1 commerce on tiles w/2 commerce.
		Peter	Expansive	Philosophical	Police State	Cossack	Hunting	Mining	+3 health/city. 2X production speed granary, harbor. Great People birth rate increased 100%. 2X production speed of university.
Spain		Isabella	Expansive	Spiritual	Police State	Conquistador	Fishing	Mysticism	+3 health/city. 2X production speed granary, harbor. No anarchy. 2X production speed of temple.

Trait	Benefit
Aggressive	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock.
Creative	+2 culture/city. 2X production speed theaters, coliseum.
Expansive	+3 health/city. 2X production speed granary, harbor.
Financial	+1 commerce on tiles w/2 commerce.
Industrious	Wonder production increased 50%. 2X production speed of forge.
Organized	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Philosophical	Great People birth rate increased 100%. 2X production speed of university.
Spiritual	No anarchy. 2X production speed of temple.

Civilization Characteristics Warlords

Civilization	Active	Leader	Trait 1	Trait 2	Favored Civic	Unique Unit	Unique Building	Tech. 1	Tech. 2	Trait Benefits
America		George Washington	Charismatic	Expansive	Universal Suffrage	Navy SEAL	Mail	Fishing	Agriculture	+1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower. +3 health/city. 2X production speed granary, harbor.
		Franklin D. Roosevelt	Industrious	Organized	Universal Suffrage	Navy SEAL	Mail	Fishing	Agriculture	Wonder production increased 50%. 2X production speed of forge. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Arabs		Saladin	Protective	Spiritual	Theocracy	Camel Archer	Madrasa	Mysticism	The Wheel	free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle No anarchy. 2X production speed of temple.
Aztecs		Montezuma	Aggressive	Spiritual	Police State	Jaguar	Sacrificial Altar	Mysticism	Hunting	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. No anarchy. 2X production speed of temple.
Carthage		Hannibal	Financial	Charismatic	Free Markets	Numidian Cavalry	Cothon	Mining	Fishing	+1 commerce on tiles w/2 commerce. +1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower.
Celts		Brennus	Spiritual	Charismatic	Organized Religion	Galic Warriors	Dun	Hunting	Mysticism	No anarchy. 2X production speed of temple. +1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower.
China		Mao Zedong	Expansive	Protective	State Property	Cho-Ku-Nu	Pavillion	Agriculture	Mining	+3 health/city. 2X production speed granary, harbor. free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle
		Qin Shi Huang	Industrious	Protective	Police State	Cho-Ku-Nu	Pavillion	Agriculture	Mining	Wonder production increased 50%. 2X production speed of forge. free Drill 1 + City Garrison 1 archery + gunpowder, 2x production speed walls, castle
Egypt		Hatshepsut	Spiritual	Creative	Hereditary Rule	War Chariot	Obelisk	Agriculture	The Wheel	No anarchy. 2X production speed of temple. +2 culture/city. 2X production speed theaters, coliseum.
		Rameses II	Industrious	Spiritual	Theocracy	War Chariot	Obelisk	Agriculture	The Wheel	Wonder production increased 50%. 2X production speed of forge. No anarchy. 2X production speed of temple.
England		Victoria	Financial	Imperialistic	Representation	Redcoat	Stock Exchange	Fishing	Mining	+1 commerce on tiles w/2 commerce. 100% increase in Great General emergence, 50% production boost when creating settlers
		Elizabeth	Philosophical	Financial	Free Religion	Redcoat	Stock Exchange	Fishing	Mining	Great People birth rate increased 100%. 2X production speed of university. +1 commerce on tiles w/2 commerce.
		Churchill	Charismatic	Protective	Nationhood	Redcoat	Stock Exchange	Fishing	Mining	+1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower. free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle
		Louis XIV	Creative	Industrious	Hereditary Rule	Musketeer	Salon	Agriculture	The Wheel	+2 culture/city. 2X production speed theaters, coliseum. Wonder production increased 50%. 2X production speed of forge.
		Napoleon	Charismatic	Organized	Representation	Musketeer	Salon	Agriculture	The Wheel	+1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse
		Frederick	Organized	Philosophical	Universal Suffrage	Panzer	Assembly Plant	Hunting	Mining	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse. Great People birth rate increased 100%. 2X production speed of university.
Germany		Bismarck	Expansive	Industrious	Representation	Panzer	Assembly Plant	Hunting	Mining	+3 health/city. 2X production speed granary, harbor. Wonder production increased 50%. 2X production speed of forge.
		Alexander	Aggressive	Philosophical	Hereditary Rule	Phalanx	Odeon	Fishing	Hunting	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. Great People birth rate increased 100%. 2X production speed of university.
Inca		Huayna Capac	Financial	Industrious	Hereditary Rule	Quechua	Terrace	Agriculture	Mysticism	+1 commerce on tiles w/2 commerce. Wonder production increased 50%. 2X production speed of forge.
India		Mahatma Gandhi	Philosophical	Spiritual	Universal Suffrage	Fast Worker	Mausoleum	Mysticism	Mining	Great People birth rate increased 100%. 2X production speed of university. No anarchy. 2X production speed of temple.
		Asoka	Organized	Spiritual	Universal Suffrage	Fast Worker	Mausoleum	Mysticism	Mining	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse. No anarchy. 2X production speed of temple.
Japan		Tokugawa	Aggressive	Protective	Mercantilism	Samurai	Shale Plant	Fishing	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle
Korea		Wang Kon	Financial	Protective	Caste System	Hwacha	Seowon	Mysticism	Mining	+1 commerce on tiles w/2 commerce. free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle
Mali		Mansa Musa	Financial	Spiritual	Free Markets	Skirmisher	Mint	Mining	The Wheel	+1 commerce on tiles w/2 commerce. No anarchy. 2X production speed of temple.
Mongolia		Genghis Khan	Aggressive	Imperialistic	Police State	Keshik	Ger	Hunting	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. 100% increase in Great General emergence, 50% production boost when creating settlers
		Kublai Khan	Aggressive	Creative	Hereditary Rule	Keshik	Ger	Hunting	The Wheel	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +2 culture/city. 2X production speed theaters, coliseum.
Ottoman		Mehmed II	Expansive	Organized	Vassalage	Janissaries	Hammam	The Wheel	Agriculture	+3 health/city. 2X production speed granary, harbor. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Persia		Cyrus	Charismatic	Imperialistic	Representation	Immortal	Apothecary	Agriculture	Hunting	+1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower. 100% increase in Great General emergence, 50% production boost when creating settlers
Rome		Augustus	Creative	Organized	Representation	Praetorian	Forum	Fishing	Mining	+2 culture/city. 2X production speed theaters, coliseum. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
		Julius Caesar	Imperialistic	Organized	Representation	Praetorian	Forum	Fishing	Mining	+1 commerce on tiles w/2 commerce. Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Russia		Catherine	Creative	Imperialistic	Hereditary Rule	Cossack	Research Institute	Hunting	Mining	+2 culture/city. 2X production speed theaters, coliseum. 100% increase in Great General emergence, 50% production boost when creating settlers
		Peter	Expansive	Philosophical	Police State	Cossack	Research Institute	Hunting	Mining	+3 health/city. 2X production speed granary, harbor. Great People birth rate increased 100%. 2X production speed of university.
		Stalin	Aggressive	Industrious	State Property	Cossack	Research Institute	Hunting	Mining	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. Wonder production increased 50%. 2X production speed of forge.
		Isabella	Expansive	Spiritual	Police State	Conquistador	Citadel	Fishing	Mysticism	+3 health/city. 2X production speed granary, harbor. No anarchy. 2X production speed of temple.
Viking		Ragnar	Aggressive	Financial	Hereditary Rule	Berserker	Trading Post	Hunting	Fishing	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +1 commerce on tiles w/2 commerce.
Zulu		Shaka	Aggressive	Expansive	Police State	Impi	Ikhanda	Agriculture	Hunting	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock. +3 health/city, 2X production speed granary, harbor.

Trait	Benefit
Aggressive	Free promotion melee, gunpowder units. 2X production speed barracks, dry dock.
Charismatic	+1 happin./city, -25% XP for promotion, +1 happiness from Monument, Broadcast Tower.
Creative	+2 culture/city. 2X production speed theaters, coliseum.
Expansive	+3 health/city. 2X production speed granary, harbor.
Financial	+1 commerce on tiles w/2 commerce.
Imperialistic	100% increase in Great General emergence, 50% production boost when creating settlers
Industrious	Wonder production increased 50%. 2X production speed of forge.
Organized	Civic upkeep reduced 50%. 2X production speed lighthouse, courthouse.
Philosophical	Great People birth rate increased 100%. 2X production speed of university.
Protective	free Drill 1 + City Garrison 1 archery + gunpowder, 2x prodution speed walls, castle
Spiritual	No anarchy. 2X production speed of temple.

Terrain and Resource Yields

Resource	Revealed by	Terrain Found On	Terrain Features found on	Improvement Required	Tech Req'd for Improvement	Base Yield Bonus	Improved Yield	Benefits with Improvement
Aluminum	Industrialism	Hills	Plains, desert, tundra	Mine	Mining	+1 Production	+3 Production, +1 Commerce	1/2 speed to build certain projects
Banana	--	Flatlands	Jungle, grassland	Plantation	Calendar	+1 Food	+2 Food	+2 Health
Clam	--	Water	Coast	Fishing Boats	Fishing	+1 Food	+2 Food	+1 Health
Coal	Steam Power	Hills	Grassland, plains	Mine	Mining	+1 Production	+3 Production	Required for Railroad
Copper	Bronze Working	Hills, flatlands, no riversides	Grassland, plains, desert, tundra, snow	Mine	Mining	+1 Production	+3 Production	1/2 speed to build certain buildings/wonders/projects.
Corn	--	Flatlands, no riversides	Grassland	Farm	Agriculture	+1 Food	+2 Food	+1 Health
Cow	--	Flatlands, no riversides	Grassland, plains	Pasture	Animal Husbandry	+1 Food	+1 Food, +2 Production	+1 Health
Crab	--	Water	Coast	Fishing Boats	Fishing	+1 Food	+2 Food	+1 Health
Deer	--	Hills, flatlands	Tundra, forest	Camp	Hunting	+1 Food	+2 Food	+1 Health
Dye	--	Flatlands	Jungle, grassland	Plantation	Calendar	+1 Commerce	+4 Commerce	+1 Happiness
Fish	--	Water	Ocean, coast	Fishing Boats	Fishing	+1 Food	+3 Food	+1 Health
Fur	--	Hills, flatlands	Tundra, snow, forest	Camp	Hunting	+1 Commerce	+3 Commerce	+1 Happiness
Gems	--	Hills, flatlands	Jungle, grassland	Mine	Mining	+1 Commerce	+1 Production, +5 Commerce	+1 Happiness
Gold	--	Hills	Plains, desert	Mine	Mining	+1 Commerce	+1 Production, +6 Commerce	+1 Happiness
Horse	Animal Husbandry	Flatlands, no riversides	Grassland, plains, tundra	Pasture	Animal Husbandry	+1 Production	+2 Production, +1 Commerce	N/A
Incense	--	Flatlands	Desert	Plantation	Calendar	+1 Commerce	+5 Commerce	+1 Happiness
Iron	Iron Working	Hills, flatlands, no riversides	Grassland, plains, desert, tundra, snow	Mine	Mining	+1 Production	+3 Production	1/2 speed to build certain wonders
Ivory	--	Flatlands	Plains, jungle, grassland	Camp	Hunting	+1 Production	+1 Production, +1 Commerce	+1 Happiness
Marble	--	Hills, flatlands, no riversides	Plains, tundra, snow	Quarry	Mining	+1 Production	+1 Production, +2 Commerce	1/2 speed to build certain wonders
Oil	Scientific Method	Flatlands, no riversides	Desert, tundra, snow, ocean, jungle, grassland	Oil Well, Offshore Platform	Combustion	+1 Production	+2 Production, +1 Commerce	N/A
Pig	--	Hills, flatlands, no riversides	Grassland, jungle	Pasture	Animal Husbandry	+1 Food	+3 Food	+1 Health
Rice	--	Flatlands, no riversides	Grassland, jungle	Corn	Agriculture	+1 Food	+1 Food	+1 Health
Sheep	--	Hills, flatlands, no riversides	Grassland, plains	Pasture	Animal Husbandry	+1 Food	+2 Food, +1 Commerce	+1 Health
Silk	--	Flatlands	Forest, grassland, plains	Plantation	Calendar	+1 Commerce	+3 Commerce	+1 Happiness
Silver	--	Hills	Tundra, snow	Mine	Mining	+1 Commerce	+1 Production, +4 Commerce	+1 Happiness
Spices	--	Flatlands	Jungle, forest, grassland, plains	Plantation	Calendar	+1 Commerce	+1 Food, +2 Commerce	+1 Happiness
Stone	--	Hills, flatlands, no riversides	Plains, desert	Quarry	Masonry	+1 Production	+2 Production	1/2 speed to build certain wonders
Sugar	--	Flatlands	Jungle, grassland	Plantation	Calendar	+1 Food	+1 Food, +1 Commerce	+1 Happiness
Uranium	Physics	Hills, flatlands, no riversides	Grassland, plains, desert, tundra, snow, jungle, forest	Mine	Mining	N/A	+3 Commerce	1/2 speed to build certain projects
Whale	--	Ocean		Whaling Boat	Optics	+1 Food	+1 Production, +2 Commerce	+1 Happiness
Wheat	--	Flatlands, no riversides	Plains	Farm	Agriculture	+1 Food	+2 Food	+1 Health
Wine	--	Hills, flatlands	Plains	Winery	Meditation	+1 Commerce	+1 Food, +2 Commerce	+1 Happiness

Base Terrain	Food	Production	Commerce	Defense Bonus	Movement Cost	Other
Coast	1	-	2	10%	1	
Desert	-	-	-	-	1	
Grassland	2	-	-	-	1	
Snow	-	-	-	-	1	
Ocean	1	-	1	-	1	
Peak	-	-	-	-	Impassable	
Plains	1	1	-	-	1	
Tundra	1	-	-	-	1	
Fallout	-3	-3	-3	-	2	-0.5 health
Floodplains	+3	-	-	-	1	-0.4 health
Forest	-	+1	-	50%	2	+0.4 health
Hill	-1	+1	-	25%	2	
Ice	-	-	-	-	Impassable	
Jungle	-1	-	-	50%	2	-0.25 health
Oasis	+3	-	+2	-	2	Fresh water source

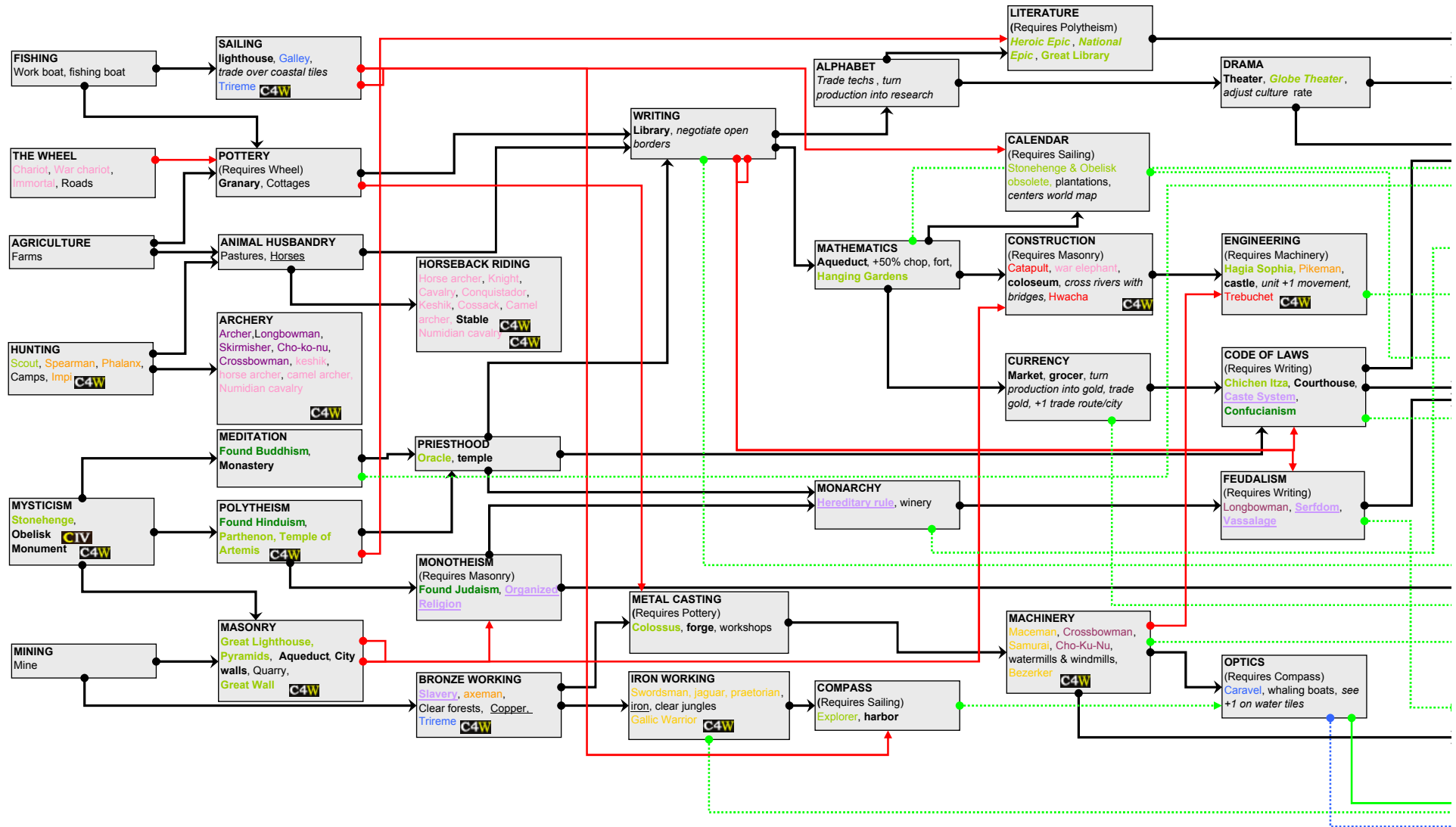
Resource Yield by Improvement

Improvement	Tech Required	Bonuses			Other effects
		Food	Production	Commerce	
Camp	Hunting	---	---	---	
Deer		+1, +2 with camp	---	---	+1 health
Fur		---	---	+1, +3 with camp	+1 happy face
Ivory		---	+1, +1 with camp	+1 with camp	+1 happy face
Cottage	Pottery	---	---	+1 gold	Becomes Hamlet in 10 turns when worked by city
Hamlet	Pottery	---	---	+2 gold	Becomes Village in 20 turns when worked by city
Village	Pottery	---	---	+3, +1 with Printing Press	Becomes Town in 40 turns when worked by city
Town	Pottery	---	+1 with Universal Suffrage	+4, +1 with Printing Press, +2 with Free Speech	
Farm	Agriculture	+1, +1 with Biology	---	---	Carries irrigation (with Civil Service)
Corn		+1, +2 with Farm	---	---	+1 health
Rice		+1, +1 with Farm	---	---	+1 health
Wheat		+1, +2 with Farm	---	---	
Fort	Mathematics	---	---	---	+25% defense
Lumbermill	Replaceable Parts	---	+1	+1 next to rivers	
Mine	Mining	---	+2	---	Small chance to discover metals
Aluminum	Industrialism	---	+1, +3 with Mine	+1 with Mine	
Coal	Steam Power	---	+1, +3 with Mine	---	
Copper	Bronze Working	---	+1, +3 with Mine	---	
Iron	Iron Working	---	+1, +3 with Mine	---	
Uranium	Physics	---	---	+3 with Mine	
Gems		---	+1 with Mine	+1, +5 with Mine	+1 happy face
Gold		---	+1 with Mine	+1, +6 with Mine	+1 happy face
Silver		---	+1 with Mine	+1, +4 with Mine	+1 happy face
Offshore Platform	Plastics	---	---	---	
Oil	Scientific Method	---	+1, +2 with Offshore Platform	+1 with Offshore Platform	
Pasture	Animal Husbandry	---	---	---	
Horse	Animal Husbandry	---	+1, +2 with Pasture	+1 with Pasture	
Cow		+1, +1 with Pasture	+2 with Pasture	---	+1 health
Pig		+1, +3 with Pasture	---	---	+1 health
Sheep		+1, +2 with Pasture	---	+1 with Pasture	+1 health
Plantation	Calendar	---	---	---	
Banana		+1, +2 with Plantation	---	---	+1 health
Dye		---	---	+1, +4 with Plantation	+1 happy face
Incense		---	---	+1, +5 with Plantation	+1 happy face
Silk		---	---	+1, +3 with Plantation	+1 happy face
Spices		+1 with Plantation	---	+1, +2 with Plantation	+1 happy face
Sugar		+1, +1 with Plantation	---	+1 with Plantation	+1 happy face
Quarry	Masonry	---	---	---	
Marble		---	+1, +1 with Quarry	+2 with Quarry	Doubles production speed of wonders
Stone		---	+1, +2 with Quarry	---	Doubles production speed of wonders
Watermill	Machinery	+1 with State Property	+1, +1 with Replaceable Parts	+2 with Electricity	
Well	Combustion	---	---	---	
Oil	Scientific Method	---	+1, +2 with Well	+1 with Well	
Whaling Boats	Optics	---	---	---	
Whale		+1	+1 with Whaling Boats	+2 with Whaling Boats	+1 happy face
Windmill	Machinery	+1	+1 with Replaceable Parts	+1, +1 with Electricity	
Winery	Monarchy	---	---	---	
Wines		+1 with Winery	---	+1, +2 with Winery	+1 happy face
Workshop	Metal Casting	-1, +1 with State Property	+1, +1 with Guilds, +1 with Replaceable Parts	---	

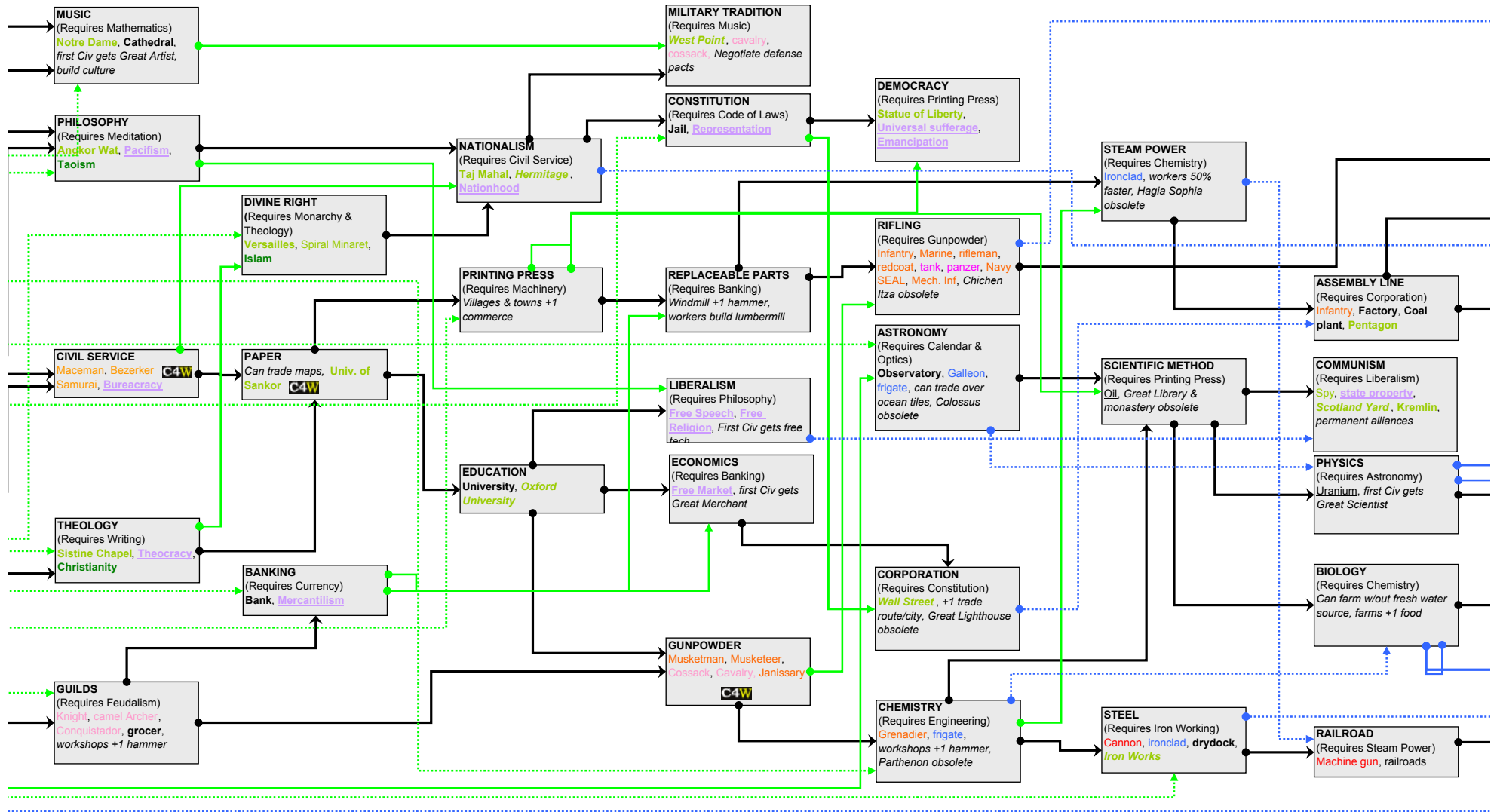
Technology advances

Game modifiers:	Normal/Noble/Duel						
Technology	Cost	Techs Required	Techs Advance Allows	Resource Revealed	Unit(s) Allowed	City Improvement(s) Allowed	Other Benefits
Agriculture	60		Pottery, Animal Husbandry				Workers can build farms
Alphabet	300	Writing	Literature, Drama				Can trade technologies, Can turn production into research
Animal Husbandry	100	Agriculture or Hunting	Writing, Horseback Riding	Horses			Workers can build pastures
Archery	60	Hunting			Archer, Skirmisher, Longbowman, Crossbowman, Cho-Ko-Nu, Horse Archer, Keshik, Camel Archer		
Artillery	4000	Physics, Steel, Rifling	Rocketry		Artillery		
Assembly Line	5000	Corporation, Steam Power	Fascism, Industrialism		Infantry	Factory, Coal Plant, Pentagon	
Astronomy	2000	Calendar, Optics			Galleon, Frigate	Observatory	Colossus obsolete, can trade over ocean tiles
Banking	700	Currency, Guilds				Bank	Enables mercantilism civic
Biology	3600	Chemistry, Scientific Method	Medicine				Workers can build farms w/out irrigation, farm produces +1 food
Bronze Working	120	Mining	Metal Casting, Iron Working	Copper	Axeman		Allows Slavery civic, workers can remove forests
Calendar	350	Sailing, Mathematics					Workers can build plantations, centers world map, makes Stonehenge and Obelisk obsolete
Chemistry	1800	Engineering, Gunpowder	Steel		Grenadier, Frigate		Workshops +1 production, makes the Parthenon obsolete
Civil Service	800	Code of Laws or Feudalism	Paper		Maceman, Samurai		Enables bureaucracy civic
Code of Laws	350	Writing & Priesthood or Currency	Civil Service, Philosophy			Courthouse, Chichen Itza Great Wonder	First Civ to discover founds Confucianism, enables Caste System civic
Combustion	3600	Railroad			Transport, Destroyer, Submarine		Workers can build oil wells, makes whale obsolete
Communism	2800	Liberalism, Scientific Method			Spy	Scotland Yard, Kremlin	Enables permanent alliances, State Property civic
Compass	400	Sailing, Iron Working			Explorer	Harbor	
Composites	7500	Plastics, Satellites			Modern Armor, Jet Fighter, Stealth Bomber		
Computers	6500	Radio	Genetics			Modern Armor, Laboratory	Makes Angkor Wat & Spiral Minaret obsolete
Constitution	2000	Code of Laws, Nationalism	Democracy			Jail	Enables Representation civic
Construction	350	Masonry, Mathematics	Engineering		War Elephant, Catapult	Colosseum	Rivers can be crossed with bridges
Corporation	1600	Constitution, Economics				Wall Street	Great Lighthouse obsolete, +1 trade route per city
Currency	400	Mathematics	Code of Laws			Market, Grocer	Civs can trade commerce, each city +1 trade route, can rush production with commerce
Democracy	2800	Constitution, Printing Press				Statue of Liberty Great Wonder	Enables Universal Suffrage and Emancipation civics
Divine Right	1200	Theology, Monarchy	Nationalism			Versailles, Spiral Minaret Great Wonders	First Civ to discover founds Islam
Drama	300	Alphabet	Music, Philosophy			Theater, Globe Theater	Can adjust culture rate
Ecology	5500	Biology & Plastics or Fission				Recycling Center, SS Life Support	Can remove fallout
Economics	1400	Banking, Education	Corporation				First Civ to discover receives a Great Merchant, enables Free Market civic
Education	4500	Paper	Liberalism, Economics, Gunpowder			University, Oxford University Great Wonder	
Electricity	2800	Physics	Fission, Refrigeration, Radio			Bunker, Bomb Shelter, Broadway Great Wonder	Windmills produce +1 commerce, watermills produce +2 commerce
Engineering	1000	Machinery, Construction			Pikeman	Castle, Hagia Sophia Great Wonder	Units get +1 movement on roads
Facism	2400	Assembly Line, Nationalism				Mount Rushmore Great Wonder	Enables Police State civic, Civs can negotiate permanent alliances
Feudalism	700	Monarchy, Writing	Civil Service		Longbowman		Enables Vassalage, Serfdom civics
Fiber Optics	7500	Computers & Plastics or Satellites	Fusion			Internet Great Wonder, SS cockpit	Makes Kremlin obsolete
Fishing	40		Sailing, Pottery		Work Boat, Fishing Boat		Can work water tiles
Fission	5500	Electricity	Ecology		ICBM	Nuclear Plant, Manhattan Project Great Wonder	
Flight	5000	Physics, Combustion	Rocketry		Gunship, Carrier, Fighter, Jet Fighter, Bomber, Stealth Bomber	Airport	
Fusion	8000	Fission, Fiber Optics				SS Engine	First Civ to discover gets a Great Engineer
Future Tech	10000	Composites, Genetics					+1 commerce & +1 Happy face in all cities
Genetics	7000	Computers	Future Tech			SS Stasis Chamber	+3 Health in all cities
Guilds	1000	Feudalism, Machinery	Banking, Gunpowder		Knight, Camel Archer, Conquistador	Grocer	Workshop produces +1 Hammer
Gunpowder	1200	Guilds or Education	Chemistry		Musketman, Musketeer, Cavalry, Cossack		
Horseback Riding	250	Animal Husbandry			Horse Archer, Keshik, Knight, Camel Archer, Conquistador, Cavalry, Cossack		
Hunting	40		Archery, Animal Husbandry		Scout, Spearman		Workers can build Camps
Industrialism	6500	Electricity, Assembly Line	Plastics	Aluminum	Marine, Tank, Battleship, Panzer, Navy SEAL		Makes Ivory obsolete
Iron Working	200	Bronze Working	Compass	Iron	Swordsman, Jaguar, Praetorian		Workers can remove Jungle
Liberalism	1400	Philosophy, Education					First Civ to discover receives free tech, enables Free Speech & Free Religion civics
Literature	200	Polytheism, Alphabet	Music			Heroic Epic, National Epic, Great Library Wonders	
Machinery	700	Metal Casting	Optics, Guilds		Maceman, Samurai, Crossbowman, Cho-Ko-Nu		Workers can build windmill, watermill
Masonry	80	Mining or Mysticism	Monotheism			Aqueduct, City Walls, Pyramids & Great Lighthouse Great Wonders	Workers can build quarry
Mass Media	3600	Radio				Broadcast Tower, Hollywood, United Nations Wonders	
Mathematics	250	Writing	Calendar, Construction, Currency			Aqueduct, Hanging Gardens Great Wonder	Workers can build fort, increases worker forest chop yield by 50%
Medicine	4500	Optics, Biology				Hospital, Red Cross Great Wonder	Enables Environmentalism civic
Meditation	80	Mysticism	Priesthood			Monastery	First Civ to discover founds Buddhism
Metal Casting	450	Pottery, Bronze Working	Machinery			Forge, Colossus Great Wonder	Workers can build workshop
Military Tradition	2000	Music, Nationalism	Feudalism, Divine Right		Cavalry, Cossack	West Point National Wonder	Enables Civs to negotiate defense pacts
Mining	50		Masonry, Bronze Working				Workers can build mines
Monarchy	300	Priesthood or Monotheism					Allows Hereditary Rule civic, workers can build wineries
Monotheism	120	Masonry, Polytheism	Theology, Monarchy				Allows Organized Religion civic, first Civ to discover founds Judaism
Music	600	Mathematics & Literature or Drama				Cathedral, Notre Dame Great Wonder	First Civ to discover gets a Great Artist
Mysticism	50		Meditation, Polytheism, Masonry			Obelisk, Stonehenge Great Wonder	
Nationalism	1800	Civil Service & Philosophy or Divine Right	Military Tradition, Constitution			Hermitage, Taj Mahal Great Wonder	Enables Nationhood civic
Optics	600	Compass, Machinery			Caravel, Whaling Boats		Can see +1 tile across water
Paper	600	Civil Service or Theology	Printing Press, Education				Civs can trade maps
Philosophy	800	Meditation & Drama or Code of Laws	Nationalism			Angkor Wat Great Wonder	First Civ to discover founds Taoism, enables Pacifism civic
Physics	4000	Astronomy, Scientific Method	Electricity	Uranium			First Civ to discover gets a Great Scientist
Plastics	7000	Combustion, Industrialism	Ecology, Fiber Optics			Hydro Plant, Offshore Platform, Three Gorges Dam Great Wonder	Makes fur obsolete
Polytheism	100	Mysticism	Priesthood, Monotheism			Parthenon Great Wonder	First Civ to discover founds Hinduism
Pottery	80	The Wheel & Agriculture or Fishing	Writing			Granary	Workers can build cottages
Priesthood	60	Polytheism or Meditation	Monarchy, Code of Laws, Writing			Temple, Oracle Great Wonder	
Printing Press	1600	Machinery, Paper	Replaceable Parts				Villages & towns produce +1 commerce
Radio	6000	Electricity	Computers, Mass Media		Submarine, Bomber	Eiffel Tower & Rock N Roll Great Wonders	
Railroad	4500	Steam Power, Steel	Combustion		Machine Gun		Workers can build railroads
Refrigeration	4000	Electricity, Biology				Supermarket	Water units can move +1 per turn
Replaceable Parts	1800	Banking, Printing Press	Rifling, Steam Power				Workers can build lumbermills, windmills +1 production
Rifling	2400	Replaceable Parts	Artillery, Rocketry		Rifleman, Redcoat, Infantry, Marine, Navy SEAL, Mech. Inf., Tank, Panzer		Makes Chichen Itza obsolete
Robotics	8000	Plastics, Computers			Mech. Inf., Stealth Bomber	SS Docking Bay, Space Elevator Great Wonder	
Rocketry	5000	Rifling & Flight or Artillery	Satellites		SAM Infantry, Gunship, ICBM	SS Casing, Apollo Program Great Wonder	
Sailing	100	Fishing			Galley	Lighthouse	Civs can trade over coasts
Satellites	6000	Radio, Rocketry	Composites, Fiber Optics			SDI, SS Thrusters	Reveals world map to the civ that discovers tech
Scientific Method	2400	Printing Press & Astronomy or Chemistry	Communism, Physics, Biology	Oil			Makes Great Library & Monastery obsolete
Steam Power	3200	Chemistry, Replaceable Parts	Assembly Line	Coal			Workers build improvements +50% faster, Hagia Sophia obsolete
Steel	2800	Iron Working, Chemistry	Railroad		Cannon, Ironclad	Drydock, Ironworks	
The Wheel	60				Chariot, War Chariot, Immortal		Workers can build roads
Theology	500	Writing, Monotheism	Paper			Sistine Chapel Great Wonder	First Civ to discover founds Christianity, Enables Theocracy civic
Writing	120	Pottery or Animal Husbandry or Priesthood	Alphabet, Mathematics, Theology			Library	Civs can negotiate Open Borders

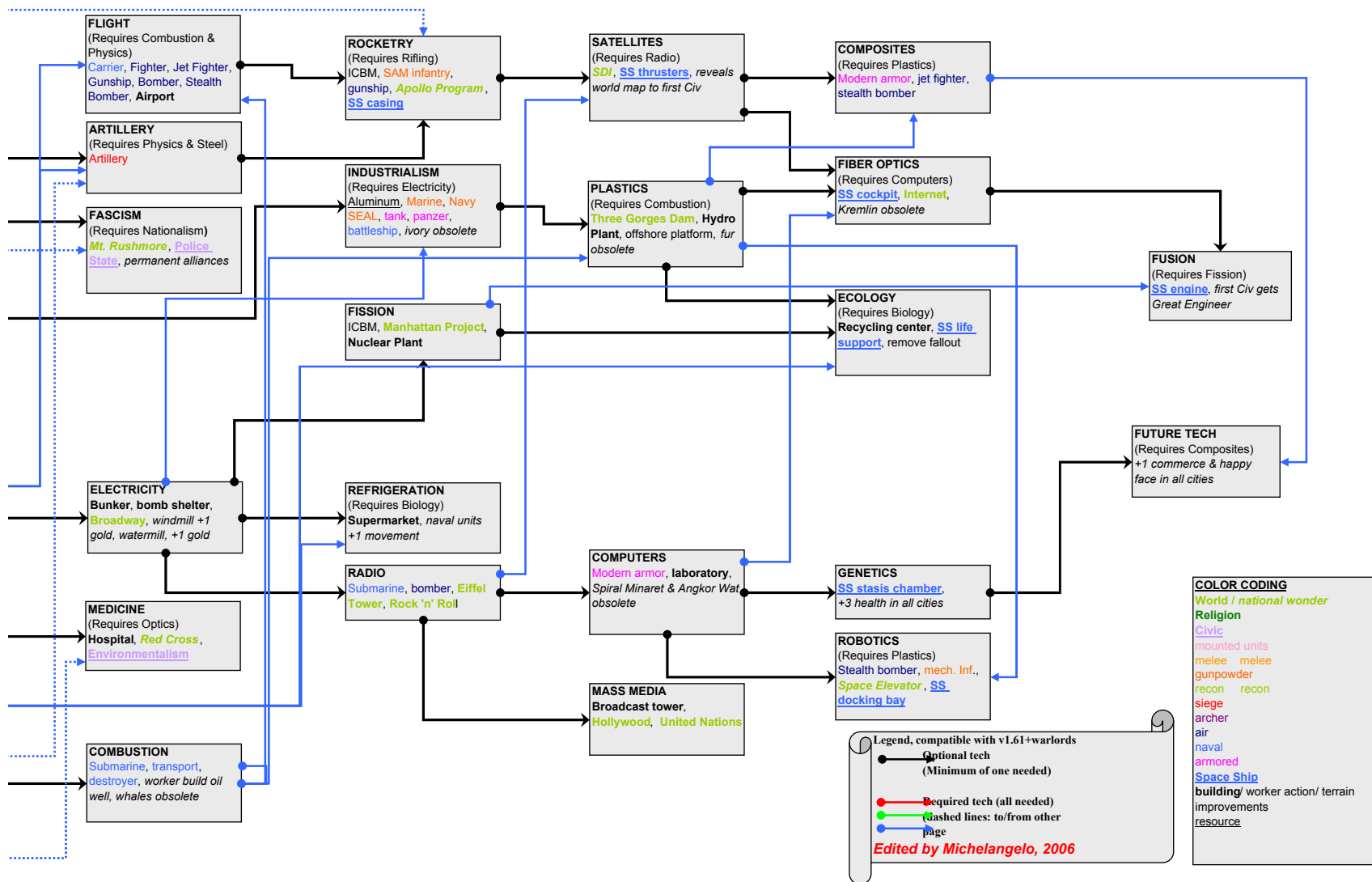
Technology Tree Flow Chart



Technology Tree Flow Chart



Technology Tree Flow Chart



City Buildings

Game Speed:	Normal					
Building	Culture	Cost	1/2 cost w/	Tech. Req't(s)	Other Requirement(s)	Effect(s)
Academy	+4	Special			Great Scientist	+50% research
Airport		250		Flight		-1 health, +1 trade routes, airlift 1 unit/turn
Aqueduct		100		Mathematics, Masonry		+2 health
Bank		200	Financial Civs	Banking		+50% commerce
Barracks		60	Aggressive Civs			+4 experience points to new land units
Bomb Shelter		100		Electricity		-75% damage from nukes
Broadcast Tower	+50%	175		Mass Media		+1 happy face/10% culture rate, can turn 2 citizens to Artist, +1 happy face from movies, music, or drama
Buddhist Stupa	+50%	300	Copper	Music	Buddhism, three Buddhist temples	+2 happy faces if Buddhism is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Bunker		100		Electricity		-75% damage from air units
Castle	+1	100	Stone	Engineering	Walls	+50% defense vs pre-gunpowder units
Cathedral (1/religion)	+50%	300	Stone	Music	Cathedral's religion, temple of religion	+2 happy faces if state religion is that of cathedral's religion, can turn 2 citizens to Priest, +1 happy face from
Coal Plant		150		Assembly Line	Factory, coal	With coal, provides power for a factory, -2 health
Colosseum		120	Creative Civs	Construction		+1 happy face, +1 happy face/20% culture rate
Confucian Academy	+50%	300	Copper	Music	Confucianism, three Confucian	+2 happy face if Confucianism is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Courthouse		120		Court of Laws		-50% Maintenance costs
Drydock		120	Aggressive Civs	Steel		New naval units +4 experience points, build naval units 50% faster, -1 health
Factory		250		Assembly Line		+25% production, +50% production with power, can turn 2 citizens to Engineer, -1 health
Forge		120	Industrious Civs	Metal Casting		+25% production, can turn 1 citizen to Engineer, +1 happy face from gems, gold, & silver, -1 health
Granary		60	Expansive Civs	Pottery		Stores 50% of food after growth, +1 health from corn, rice, & wheat
Grocer		150		Guilds, Currency		+25% commerce, can turn 2 citizens to Merchant, +1 health from bananas, spices, sugar, & wine
Harbor		80	Expansive Civs	Compass		+50% yield from trade routes, +1 health from clams, crabs, & fish
Hindu Mandir	+50%	300	Marble	Music	Hinduism, three Hindu temples	+2 happy faces if Hinduism is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Hospital		200		Medicine		+3 health, heals units in city +10%/turn
Hydro Plant		200		Plastics	Factory	Provides power for a factory
Islamic Mosque	+50%	300	Marble	Music	Islam, three Islamic temples	+2 happy faces if Islam is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Jail		120		Constitution		-25% war weariness
Jewish Synagogue	+50%	300	Stone	Music	Judaism, three Jewish temples	+2 happy faces if Judaism is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Laboratory		250		Computers	Observatory	+25% research, +50% spaceship production, can turn 1 citizen to Scientist, -1 health
Library	+2	90		Writing		+25% research, can turn 2 citizens to Scientist
Lighthouse		60	Organised Civs	Sailing		Water tiles +1 food
Market		150		Currency		+25% commerce, can turn 2 citizens to Merchant, +1 happy face from furs, ivory, silk, & whales
Monastery (1/religion)	+2	60		Meditation	Monastery's religion	+10% research, can train religion's missionaries in city
Monument	+1	30		Mysticism		Obsolete with Calendar
Nuclear Plant		250		Fission	Factory, uranium	With uranium, provides power for a factory, small chance of nuclear meltdown
Obelisk	+1	30		Mysticism		Obsolete with Calendar
Observatory		150		Astronomy		+25% research, can turn 1 citizen to Scientist
Recycling Center		300		Ecology		No unhealthiness from buildings
Shrine (1/religion)		0				More likely to generate Great Prophet, can turn 3 citizens into Priest
Stable		60		Horseback Riding		+2 XP for mounted units
Supermarket		150		Refrigeration	Grocer	+1 health form cows, deer, pigs, & sheep
Taoist Pagoda	+50%	300	Copper	Music	Taoism, three Taoist temples	+2 happy faces if Islam is state religion, can turn 2 citizens to Priest, +1 happy face from incense
Temple (1/religion)	+1	80		Priesthood	Temple's religion	+1 happy face, can turn 1 citizen to Priest
Theatre	+3	50	Creative Civs	Drama		+1 happy face/10% culture rate, can turn 2 citizens to Artist, +1 happy face from dyes
University	+3	200	Philosophical Civs	Education	Library	+25% research
Walls		50	Stone	Masonry		+50% defense vs pre-gunpowder units

Color coding

Civ 4 only

Civ 4 Warlords Only

Unique Buildings, Warlords only

Game Speed:	Normal	(Game speed modifiers not 100% verified, normal speed = correct)		
Civilization	Building	Cost	Replaces	Additional Effect(s)
America	Mall	150	Supermarket	Adds +10% commerce, +1 happiness from hit musical, hit single, hit movie
Arabs	Madrasa	90	Library	Can turn two citizens into Priests, +2 culture
Aztecs	Sacrificial Altar	90	Courthouse	-50% anger from sacrificing population, costs 90
China	Pavilion	50	Theatre	+25% culture
Carthage	Cothon	100	Harbor	+1 trade route, cost 100
Celts	Dun	50	Walls	Free Guerilla I promotion for units built in the city
Egypt	Obelisk	30	Monument	Can turn two citizens into Priests
England	Stock Exchange	200	Bank	+15% commerce
France	Salon	150	Observatory	+1 free Artist
Germany	Assembly Plant	250	Factory	Can turn 4 citizens into Engineers, +50% production with coal
Greece	Odeon	120	Colosseum	+3 culture, +1 happiness from hit singles, can turn 2 citizens into Artists
Inca	Terrace	60	Granary	+2 culture
India	Mausoleum	120	Jail	+2 happiness
Japan	Shale Plant	150	Coal Plant	+10% production
Korea	Seowon	200	University	+10% research
Mali	Mint	120	Forge	+10% commerce
Mongolia	Ger	60	Stable	+2 experience points for mounted units
Ottoman	Hammam	100	Aqueduct	+2 happiness
Persia	Apothecarecy	150	Grocer	+2 health
Rome	Forum	150	Market	+25% birth rate
Russia	Research Institute	250	Laboratory	+2 free Scientists
Spain	Citadel	100	Castle	New siege weapons get +2 experience points, -50% damage to city defenses from non-gunpowder bombardment
Viking	Trading Post	60	Lighthouse	Free Navigation I promotion for naval units built in the city
Zulu	Ikhandu	60	Barrack	-20% city maintenance cost. Costs, cost 60

Wonders

Game Speed:	Normal							
Wonder/Project/SS Part	Culture	Cost	1/2 cost	GP Type	GPP	Tech Required	Other Requirements	Effects
World Wonders								
Angkor Wat	8	500	stone	Prophet	+2	Philosophy		+1 production in cities with Priest, can turn 3 citizens to Priest, obsolete with Computers
Broadway	+50%	800		Artist	+2	Electricity		Provides 5 hit musicals (+1 happy face), more likely to generate Great Artist
Chichen Itza	6	500	stone	Prophet	+2	Code of Laws		+25% defense in all cities, more likely to generate Great Prophet, obsolete with Rifling
Church of the Nativity	4	Special					Christian holy city, great prophet	+1 commerce/turn for every city with Christianity, spreads Christianity, can turn 3 citizens to Priest
Colossus	6	250	copper	Merchant	+2	Metal Casting	Forge in city to build, coastal city	All water tiles +1 commerce, obsolete with Astronomy, more likely to generate Great Merchant
Dai Miao	4	Special					Taoist holy city, great prophet	+1 commerce/turn for every city with Taoism, spreads Taoism, can turn 3 citizens to Priest
Eiffel Tower	6	1250	iron	Merchant	+2	Radio	Forge in city to build	Free broadcast tower in every city, more likely to generate Great Merchant
Great Library	8	350	marble	Scientist	+2	Literature	Library in city to build	+2 free Scientists in city, more likely to generate Great Scientist, obsolete with Scientific Method
Great Lighthouse	6	200		Merchant	+2	Masonry	Lighthouse in city to build	+2 trade routes in coastal cities, more likely to generate Great Merchant, Obsolete w/Corporation
Great Wall	2	250	stone	Engineer	2	Masonry		massive wall around cultural borders keeps barbarians out, 2x chance of getting Great General, city more likely to generate Great Engineer
Hagia Sophia	8	550	marble	Engineer	+2	Engineering		Workers build improvements 50% faster, more likely to generate Great Engineer, obsolete with Steam Power
Hanging Gardens	6	300	stone	Engineer	+2	Mathematics	Aqueduct in city to build	+1 health & population in all cities, more likely to generate Great Engineer
Hollywood	+50%	1000		Artist	+2	Mass Media		Provides 5 hit movies, +1 happy face, more likely to generate Great Artist
Kashi Vishwanath	4	Special					Hindu holy city, great prophet	+1 commerce/turn for every city with Hinduism, spreads Hinduism, can turn 3 citizens to Priest
Kong Miao	4	Special					Confucian holy city, great prophet	+1 commerce/turn for every city with Confucianism, spreads Confucianism, can turn 3 citizens to Priest
Kremlin		1000	stone	Artist	+2	Communism		-33% cost to hurry production, more likely to generate Great Artist, obsolete with Fiber Optics
Mahabodhi	4	Special					Buddhist holy city, great prophet	+1 commerce/turn for every city with Buddhism, spreads Buddhism, can turn 3 citizens to Priest
Masjid al-Haram	4	Special					Islamic holy city, great prophet	+1 commerce/turn for every city with Islam, spreads Islam, can turn 3 citizens to Priest
Notre Dame	10	650	stone	Artist	+2	Music		+1 happy face for all cities on same continent, more likely to generate Great Artist
Oracle	8	150	marble	Prophet	+2	Priesthood		1 free technology, more likely to generate Great Prophet
Parthenon	10	400	marble	Artist	+2	Polytheism		+50% great person birth rate in all cities, more likely to generate Great Artist, obsolete w/Chemistry
Pentagon		1250		Engineer	+2	Assembly Line		+2 experience points for units built in all cities, more likely to generate Great Engineer
Pyramids	6	450	stone	Engineer	+2	Masonry		Enables all Government civics, more likely to generate Great Engineer
Rock & Roll	+50%	800		Artist	+2	Radio		Provides 5 hit singles, +1 happy face, more likely to generate Great Artist
Sistine Chapel	10	600	marble	Artist	+2	Theology		+2 culture per specialist in all cities, more likely to generate Great Artist
Space Elevator		2000	aluminium	Scientist	+2	Robotics		+50% spaceship production in all cities, required for Space Race victory, more likely to generate Great Scientist
Spiral Minaret	8	550	stone	Prophet	+2	Divine Right		+1 commerce from all state religion buildings, more likely to generate Great Prophet, obsolete w/Computers
Statue of Liberty	6	1500	copper	Merchant	+2	Democracy	Forge in city to build	+1 specialist in all cities on same continent, more likely to generate Great Merchant
Stonehenge	8	120	stone	Prophet	+2	Mysticism		Free obelisk in every city, centers world map, obsolete with Calendar, more likely to generate Great Prophet
Taj Mahal	10	700	marble	Artist	+2	Nationalism		Starts a golden age, more likely to generate Great Artist
Temple of Artemis	8	400	marble	Merchant	2	Polytheism		+100% trade route yield, +1 free priest in city, more likely to generate Great Merchant
Temple of Solomon	4	Special					Jewish holy city, great prophet	+1 commerce/turn for every city with Judaism, spreads Judaism, can turn 3 citizens to Priest
Three Gorges Dam		1750		Engineer	+2	Plastics	Build in city on river	Provides power for all cities on same continent, more likely to generate Great Engineer
United Nations		1000		Merchant	+2	Mass Media		Required for diplomatic victory, allows global elections, guarantees eligibility for diplomatic votes, more likely to generate Great Merchant
University of Sankor	8	550	stone	Scientist	2	Paper		+2 research for all buildings associated with state religion, more likely to generate Great Scientist
Versailles	10	800	marble	Merchant	+2	Divine Right		Reduces maintenance costs in nearby cities, more likely to generate Great Merchant

National Wonders								
Forbidden Palace	4	200		Merchant	+1		8+ cities, 4 cities w/courthouses (one in city to build Palace)	Reduces maintenance in nearby cities, more likely to generate Great Merchant
Globe Theatre	6	300		Artist	+1	Drama	4 theaters, 1 in city to build	No unhappiness in city where built, can turn 3 citizens to Artist, more likely to generate Great Artist
Hermitage	+100%	300	marble	Artist	+1	Nationalism		+100% culture, more likely to generate Great Artist
Heroic Epic	4	200	marble	Artist	+1	Literature	Barracks in city, 1 unit lvl 4 exper.	+100% military unit production in city, more likely to generate Great Artist
Iron Works		700		Engineer	+1	Steel	4 forges, 1 in city to build	+50% production in city if built in city with access to iron or coal, can turn 3 citizens to Engineer, more likely to generate Great Engineer, -2 health
Mt. Rushmore	4	500	stone	Artist	+1	Fascism		-25% war weariness in all cities, more likely to generate Great Artist.
National Epic	4	250	marble	Artist	+1	Literature	Library in city	+100% great person birth rate in city, more likely to generate Great Artist
Oxford University	4	400	stone	Scientist	+1	Education	4 universities, 1 in city to build	+100% research in city, can turn 3 citizens into Scientist, more likely to generate Great Scientist
Palace	2	160					4+ cities	Makes the city the capital, reduces maintenance in nearby cities, +1 happy face
Red Cross	2	600		Scientist	+1	Medicine	4 hospitals, 1 in city to build	Free Medic I promotion for units built in city, more likely to generate Great Scientist
Scotland Yard		500		Scientist	+1	Communism		City can build spy units, more likely to generate Great Scientist
Wall Street		600		Merchant	+1	Corporation	4 banks, 1 in city to build	+100% commerce, can turn 3 citizens to Merchant, more likely to generate Great Merchant
West Point		800	stone	Engineer	+1	Military Tradition	1 unit level 5 experience	+4 experience points for units built in city, more likely to generate Great Engineer

Projects								
Apollo Program		1000	aluminium			Rocketry		Required to build spaceship parts
The Internet		2000	copper			Fiber Optics		Grants all technologies acquired by any 2 known civilization
The Manhattan Project		1500	uranium			Fission		Enables nuclear weapons & bomb shelters for all players
SDI		1000	aluminium			Satellites	Manhattan Project built	75% chance of intercepting nukes

Spaceship								
Casing		400	aluminium			Rocketry	Apollo Program	Space race victory (5 required)
Cockpit		800	copper			Fiber Optics	Apollo Program	Space race victory (1 required)
Docking Bay		1200	aluminium			Robotics	Apollo Program	Space race victory (1 required)
Engine		1000				Fusion	Apollo Program	Space race victory (1 required)
Life Support		600	copper			Ecology	Apollo Program	Space race victory (1 required)
Stasis Chamber		1000	copper			Genetics	Apollo Program	Space race victory (1 required)
Thrusters		600	aluminium			Satellites	Apollo Program	Space race victory (3 required)

Color coding

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Units

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Unit Promotions

Promotion	Required	Available To	Effect
Accuracy	City Raider I or Barrage I	Siege	+10% city bombard damage
Ambush	Combat II	Siege, Gunpowder, Armored, Helicopter	+25% vs. armored units
Amphibious	Combat II	Recon, Mounted, Archery, Melee, Siege, Gunpowder	No combat penalty for attacking from sea or across river
Barrage I	None	Siege, Armored	+20% collateral damage
Barrage II	Barrage I	Siege, Armored	+30% collateral damage, +10% vs. melee units
Barrage III	Barrage II	Siege, Armored	+50% collateral damage, +10% vs. gunpowder units
Blitz	Combat III	Mounted, Armored, Helicopter	Can attack multiple times per turn
Charge	Combat II	Mounted, Melee, Armored, Helicopter	+25% vs. siege weapons
City Garrison I	None	Archery, Gunpowder	+20% city defense
City Garrison II	City Garrison I	Archery, Gunpowder	+25% city defense
City Garrison III	City Garrison II	Archery, Gunpowder	+30% city defense, +10% vs. melee units
City Raider I	None	Melee, Siege, Armored	+20% city attack
City Raider II	City Raider I	Melee, Siege, Armored	+25% city attack
City Raider III	City Raider II	Melee, Siege, Armored	+30% city attack, +10% vs. gunpowder units
Combat I	None	All	+10% strength
Combat II	Combat I	All	+10% strength
Combat III	Combat II	All	+10% strength
Combat IV	Combat III	All	+10% strength, heals extra 10% damage per turn in neutral lands
Combat V	Combat IV	All	+10% strength, heals extra 10% damage per turn in enemy lands
Combat VI	Combat V	units led by warlord	+25% strength
Commando	Combat IV	Recon, Archery, Mounted, Melee, Gunpowder, Armored	Can use enemy roads
Cover	Combat I	Archery, Melee, Gunpowder	+25% vs. archery units
Drill I	None	Archery, Siege, Armored, Helicopter, Naval	1 extra first strike chance
Drill II	Drill I	Archery, Siege, Armored, Helicopter, Naval	1 extra first strike
Drill III	Drill II	Archery, Siege, Armored, Helicopter, Naval	+2 first strike chances
Drill IV	Drill III	Archery, Siege, Armored, Helicopter, Naval	+2 first strikes, +10% vs. mounted units
Flanking I	None	Mounted, Armored, Helicopter, Naval	+10% withdraw chance
Flanking II	Flanking I	Mounted, Armored, Helicopter, Naval	+20% withdraw chance, immune to first strikes
Formation	Combat II	Archery, Mounted, Melee, Gunpowder	+25% vs. mounted units
Guerilla I	None	Recon, Archery, Gunpowder	+20% defense in hills
Guerilla II	Guerilla I	Recon, Archery, Gunpowder	+30% defense in hills, double movement in hills
Guerilla III	Guerilla II	Recon, Archery, Gunpowder	+25% hills attack
Leadership		units led by warlord	+50% XP from combat
March	Combat III or Medic I	Recon, Archery, Mounted, Melee, Siege, Gunpowder	Can heal while moving
Medic I	Combat I	All except Armored & Helicopter	Heals units in the same tile extra 10% damage per turn
Medic II	Medic I	All except Armored & Helicopter	Heals units in adjacent tiles extra 10% damage per turn
Medic III	Medic II	units led by warlord	Heals units in same and adjacent tiles extra 15% damage per turn
Mobility	Flanking II	Mounted, Armored	-1 terrain movement cost
Morale		units led by warlord	+1 movement range
Navigation I	Flanking I	Naval	+1 movement range
Navigation II	Navigation I	Naval	+1 movement range
Pinch	Combat I	Mounted, Gunpowder, Armored, Helicopter	+25% vs. gunpowder units
Sentry	Combat III or Flanking I	Recon, Mounted, Helicopter, Naval	+1 visibility range
Shock	Combat I	Archery, Mounted, Melee, Siege	+25% vs. melee units
Tactics		units led by warlord	+30% withdraw chance
Woodsman I	None	Recon, Melee, Gunpowder	+20% jungle & forest defense
Woodsman II	Woodsman I	Recon, Melee, Gunpowder	+30% jungle & forest defense, double movement in jungle & forest

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Unit Upgrade Costs

Game Speed:	Normal														
Unit to Upgrade To	Unit to Upgrade From														
Land Units	Warrior	Archer	Axeman	Spearman	Swordsman	Longbowman	Pikeman	Crossbowman	Maceman	Musketman	Grenadier	Rifleman	Machine Gun	Infantry	
Axeman	80														
Spearman	80														
Pikeman	155			95											
Longbowman		95													
Crossbowman		125													
Maceman	185		125		110										
Grenadier	275	245	215	215	200		140	140							
Rifleman	305	275	245	245	230	200	170	170	140	110					
Machine Gun	350	320	290	290	275		215	215	185	155	95				
Infantry	395	365	335	335	320	290	260	260	230	200	140	110			
SAM Infantry	425	395	365	365	350	320	290	290	260	230	170	140	95		
Mechanized Infantry	575	545	515	515	500	470	440	440	410	380	320	290		200	

Fast Units	Chariot	Horse Archer	War Elephant	Knight	Cavalry
Horse Archer	95				
Knight	215	140			
Cavalry	305	230	200	110	
Gunship	425	350	320	230	140

Transports	Galley	Galleon
Galleon	110	
Transport	245	155

Naval Units	Caravel	Trireme	Frigate	Ironclad
Frigate	110	140		
Destroyer	440	470	350	320
Submarine	290			

Siege Units	Trebuchet	Catapult	Cannon
Cannon	140	200	
Artillery	290	350	170

Air Units	Fighter	Bomber
Jet Fighter	170	
Stealth Bomber		200

Armored Units	Tank
Modern Armor	200

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Unit Promotions Flow Chart

