Steps to Civilization

Paleolithic Age
Farming Revolution
Permanent settlements
Division of labor
Specialization of labor
Technology
Trade
Cities
Steps to Civilization

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• families, villages, regions  
• barter  
• one product exchanged for another | • develop from growing villages  
• zone development: religion, trade, farming, etc.  
• required great organization  
• opportunities  
• problems | Crime, overcrowding, disease, war, shortages |

**Advantages:**  
Security, diversity of services, technology, wealth, culture
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**Paleolithic Age**

- nomadic hunters and gatherers
- clan groups: 15-20
- clan leader
- moving with herds of game
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**Farming Revolution**

- domestication of animals and plants in Near East
- food surplus
- increase in population
- food surplus
- increase in population
- diets more balanced
Steps to Civilization

Plant Domestication:

Plant:

1. Growing a plant
2. Causing it to change genetically from wild ancestor
3. Goal: make it more useful to humans
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Plant Domestication:

Plant Domestication Stages:

1. Ancestor plant advantages (wheat, barley, peas):
could be eaten,
high yields,
easily grown,
grow quickly,
easily stored,
self pollinating,
few genetic changes
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Plant Domestication:

Plant Domestication Stages:

2. First fruit and nut trees (olives, figs, dates, pomegranates, grapes):
   - non nomadic life style,
   - planted as cutting or seed,
   - 3 year food yield cycle
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Plant Domestication:

Plant Domestication Stages:

3. Complex fruit and nut trees (apples, pears, plums, cherries):
   grafting,
   cross-pollination,
   experimentation
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Plant Domestication:

CLEF T (OR TOP WEDGE) GRAFT
Steps to Civilization

Plant Domestication:

1. Pollen from stamens sticks to a bee as it visits a flower to collect food.

2. The bee travels to another plant of the same type.

3. Pollen on the bee sticks to a pistil of a flower on the other plant.

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Animal Domestication:

Animal:
1. selectively bred in captivity
2. modified from its wild ancestors,
3. for use by humans
4. who control the animal’s breeding and food supply
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Animal Domestication:
Steps to Civilization

Animal Domestication

Ancient Species of Big Herbivorous Domestic Mammals:

1. Sheep
2. Goat
3. Cow
4. Pig
5. Horse
6. Arabian camel
7. Bactrian camel
8. Llama/alpaca
9. Donkey
10. Reindeer
11. Water buffalo
12. Yak
13. Bali cattle
14. Mithan

13 are from Eurasia and 1 (llama/alpaca) from the Americas
Steps to Civilization

Animal Domestication

Ancient Species of Big Herbivorous Domestic Mammals:

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Steps to Civilization
Animal Domestication

Big mammal domestication characteristics:

• Diet- 10% biomass coefficient
• Growth rate
• Problems of captive breeding
• Nasty disposition
• Tendency to panic
• Social structure
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Animal Domestication

Benefits of big mammal domestication:

- Meat
- Milk products
- Fertilizer
- Land transportation

- Leather
- Military assault vehicles
- Plow traction
- Wool

Germs
Steps to Civilization
Fertile Crescent

Mediterranean climate

Wild stands of wheat

Hunter/gatherers settled down here before agriculture living off grain

High percentage of self pollinating plants easiest to domesticate.
Fertile Crescent

32 of 56 large seeded grass species of the world.

Big animals for domestication: goat, sheep, pig, cow
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Permanent settlements

- farming villages: 250
- village life
- private property
- warfare
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Division of labor

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**Specialization of labor**

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Steps to Civilization

Technology

- developed by artisans
- advancements to improve the efficiency of every day life
- closely guarded secrets
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**Trade**

- need for unavailable resources
- desire to have products you did not have
- families, villages, regions
- barter
- one product exchanged for another product
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Cities

• develop from growing farming villages

• zone development: religion, trade, farming, etc. required great organization

• opportunities

• problems
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**Disadvantages:**

crime, overcrowding, disease, war, shortages

**Advantages:**

security, diversity of services, technology, wealth, culture
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**Advantages:**
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- Diversity of services
- Technology
- Wealth
- Culture