

D.A.M. Agriculture

Roy Liljegren – Davenport School District, Davenport, IA

Grade Level (Req.): 6th-8th grade	Content Area (Req.): Human Geography, Physical Geography, World History	Unit (Opt.):
Connections to Other Disciplines (Opt.): <ul style="list-style-type: none"> • • • 		
Time Frame (Req.): 2 class periods	Goal (Req.): To recognize particular aspects of agriculture.	
	Objective (Req.): Students will read and classify agriculture cards into 3 subject areas. Students will make decisions cooperatively together. Students will analyze aspects of agriculture as they sort these cards. Students will individually make Venn diagrams showing their results. Students will be able to discuss and compare early food gathering to modern methods of farming in forming a historical format for cultures studied later.	
Materials Needed (Req.): <ul style="list-style-type: none"> • Set of agriculture cards for each group (2-3 students) • 3 large topic cards for each group (Depend, Adapt, Modify) • Definitions for Depend, Adapt, and Modify on Posters • Individual Venn Diagrams and pencils for each student • • • 	New Vocabulary (Opt.): <ul style="list-style-type: none"> • • • • • 	
Anticipatory Set/Introduction [Inquiry Question is required] (Req.): Students will analytically sort agricultural concepts into three ways that people deal with their environment. Key elements in this sorting activity are dependence, adaptation, and modification. Applying these elements will help students identify a broad array of aspects in agriculture. They will also be able to recognize 3 common ways people deal with their environment. What characteristics of each of the three terms allow you to place it in that category?		
Instructional Sequence/Procedure (Req.): <ol style="list-style-type: none"> 1. Discuss the theme of Human-Environmental Interaction. 2. Go through the three common ways people deal with their environment. 3. Explain Agriculture and the cards they will be sorting in this activity. 4. Demonstrate a Venn diagram and its purpose in this activity. 5. Explain the evaluation rubric and review working in groups. 6. Divide into groups of 2 or 3 students and give each group a set of agriculture cards and 3 topic cards. 7. Give students adequate time to sort cards in their groups. 		

8. Students start Venn Diagrams independently not limited by group ideas.
9. Discuss early food gatherers and modern agricultural improvements.
10. Extension: Students could draw the ideas presented on the cards and display them or Make the original agriculture cards with diagrams and definitions before applying them to this activity.
11. Use the 3 same perspectives to analyze: periods of history, countries, people, states, regions, government, staff development, or any area that “environment” could changes.
12. The environment changes can happen in the past, in the present, or in the future. Use the agriculture card topics brainstorm possible, probable, and preferable futures.
13. Bring in a guest farmer to help with more agriculture cards and discussion.
14. Adaptation: Students could brainstorm agricultural items themselves using a chapter or using other sources such as the reference books or the Internet. The results of this activity could be referred to in future units when dealing with agriculture development by pulling out Agriculture cards that deal with each of your texts countries, regions, state, or cultures as you move into new units. Use these as themes on part of a bulletin board of your current area of study.
15. Use the D.A.M. (or M.A.D.), as topics for a game of Agriculture Jeopardy.
16. Use the Letters in AGRICULTURE to form new terms that deal with Agriculture for each letter (i.e. A = aerate, G = geography, R = ripen, etc. etc.) in order to get students thinking of agriculture.
- 17.
- 18.
- 19.
- 20.

Formative Evaluation (Req.): Class participation	Assessment (Req.): Students will complete individual Venn Diagrams using the information they sorted through in the group situation. The 10 point evaluation rubric is attached below.
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- Iowa Core Curriculum Standards Used (Req.):
- Geography, grade 6-8: Understand how physical processes and human actions modify the environment and how the environment affects humans.
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- Common Core Curriculum Standards Used (Opt.):
- Speaking and Listening, grade 6-12: Engage effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse partners on specific grade level topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
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- NGS Standards Used (Req.):
- How humans modify the physical environment
 - How physical systems affect human systems
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<ul style="list-style-type: none">••••••	
Five Themes of Geography Used (Req.): <ul style="list-style-type: none">• Human-Environmental Interaction••••	School District Standards and Benchmarks (Opt.): <ul style="list-style-type: none">•••
21 st Century Universal Constructs (Opt.): Collaboration	
Other Disciplinary Standards (Opt.): <ul style="list-style-type: none">•••••	
Other Essential Information (Opt.):	
Other Resources (Opt.): <ul style="list-style-type: none">••••	

AGRICULTURE CARDS

<u>Crop rotation</u>	<u>Hybrid seeds</u>
<u>Irrigation canals</u>	<u>Underground drainage tiles</u>
<u>Row planting</u>	<u>Terracing</u>
<u>Windmills</u>	<u>Cut down trees</u>

**Change natural
vegetation**

Adequate rainfall

Warmth

**Adequate growing
season**

**Adequate water
table**

Good soil

Available seeds

**Variety of cold and
warm weather crops**

Fertilization

Farm tools

Zoning laws

Laws to help farms

Insecticide

Livestock confinement

Grain storage

Sunlight

**Bringing in bugs to
kill other bugs**

**Bringing in bees to
pollinate crops**

**Plowing under
prairies**

Safety

GPS (Global Positioning systems)

Convenience

Cooperatives

Sprinkler systems

Letting field set for a time

Contour plowing

Greenhouse

Hydroponic gardening

<u>Windbreaks</u>	<u>Gene altered seeds or animals</u>
<u>Mulching</u>	<u>Weed killers</u>

DEFINITIONS FOR DEPEND, ADAPT, AND MODIFY ON POSTERS

Crop rotation = planting different Crops each season to help the soil.

Adequate water table = plants take water from beneath the ground at different levels.

Hybrid seeds = taking the best seeds and

Good soil = soil that is good enough to

pollinating them together to form a better hybrid seed.

Irrigation canals = dig waterways to get water to the fields.

Row planting = planting in rows so that equipment can be used throughout the season.

Under ground drainage tiles = to drain water so a bog is plantable or major rain doesn't stay on crops.

Terracing = planting in stair steps on a hill or mountain to help stop soil erosion and keep water longer.

Windmills = to drain water from a field or pump water from the ground for animals and crops.

Cut down trees = slash and burn techniques to prepare an area for farmland use.

Change natural vegetation = to plant larger quantities of crops that are in demand.

Adequate Rainfall = so that plants and animals have a natural availability of water.

Warmth = plants and animals need adequate natural warmth in or to survive in an environment.

grow specific crops.

Available seeds = plants provide seeds for the next growing season.

Variety of cold and warm weather crops = these help people survive in different seasons.

Fertilization = this can be natural or applied by humans so that crops have the needed nutrients to grow.

Farm tools = tools to help the farmer plant, harvest, maintain, and store crops.

Zoning laws = humans can preserve the land for agricultural uses only by laws.

Laws to help farms = these could be requirements to help the soil, money given to farmers to help develop soil, special crops or farming techniques, etc.

Cooperatives = these organizations owned and governed by farmers help store, sell, and provide many services to farmers.

Sprinkler systems = a variety of systems are available to supplement or provide artificial rainfall to dry fields.

Letting field set for a time = this helps the soil rest for future planting but makes land temporarily unavailable for planting.

Adequate Growing Season = enough time to grow crops in a regional climate with seasons.

Greenhouse = using a glass house to plant more or all of the year in areas that the environment or climate hinders growth.

Windbreaks = these can be manmade bathers or trees, hedges, etc. to prevent wind erosion.

Mulching = placing material between plants to prevent weed growth, retain moisture, Etc.

Livestock confinement = Animals are kept in buildings to regulate feed, growth, health, etc. making use of less land.

Sunlight = needed to make Plants grow.

Bringing in Bees to pollinate crops = a method to help crops grow by bringing in more pollinating bees or making them available if they are not.

Safety = this includes tools, product poisoning, field safety, etc.

Convenience = this includes climate, available nature habitat, available vegetation, transportation, market, etc.

Contour farming = plowing and planting around the hills or contours of the land to help prevent erosion.

Hydroponic gardening = when the soil is inadequate or when using a green house, controlled planting in water can be used with certain plants.

Gene altered seeds or animals = scientific lab alterations of plants and or animals to produce a better product.

Weed killers = products that prevent or kill weeds that reduce crop yield.

Insecticides = products that prevent or kill insects that reduce crop yield.

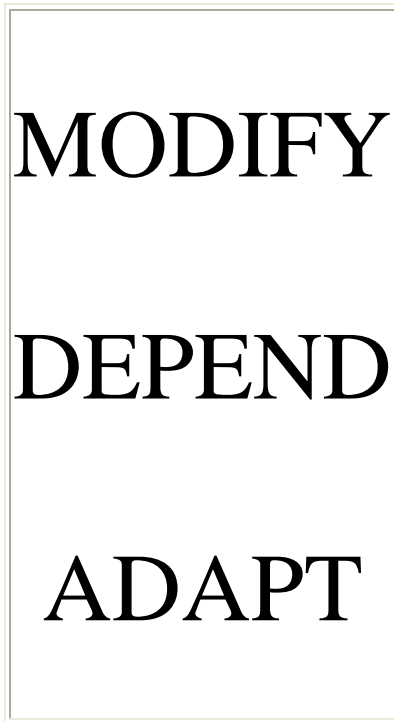
Grain Storage = keeping grain so that it can be used later or sold later.

Bringing in Bugs to kill Bugs = a method to kill harmful crop insects with hanniss insects without pesticides.

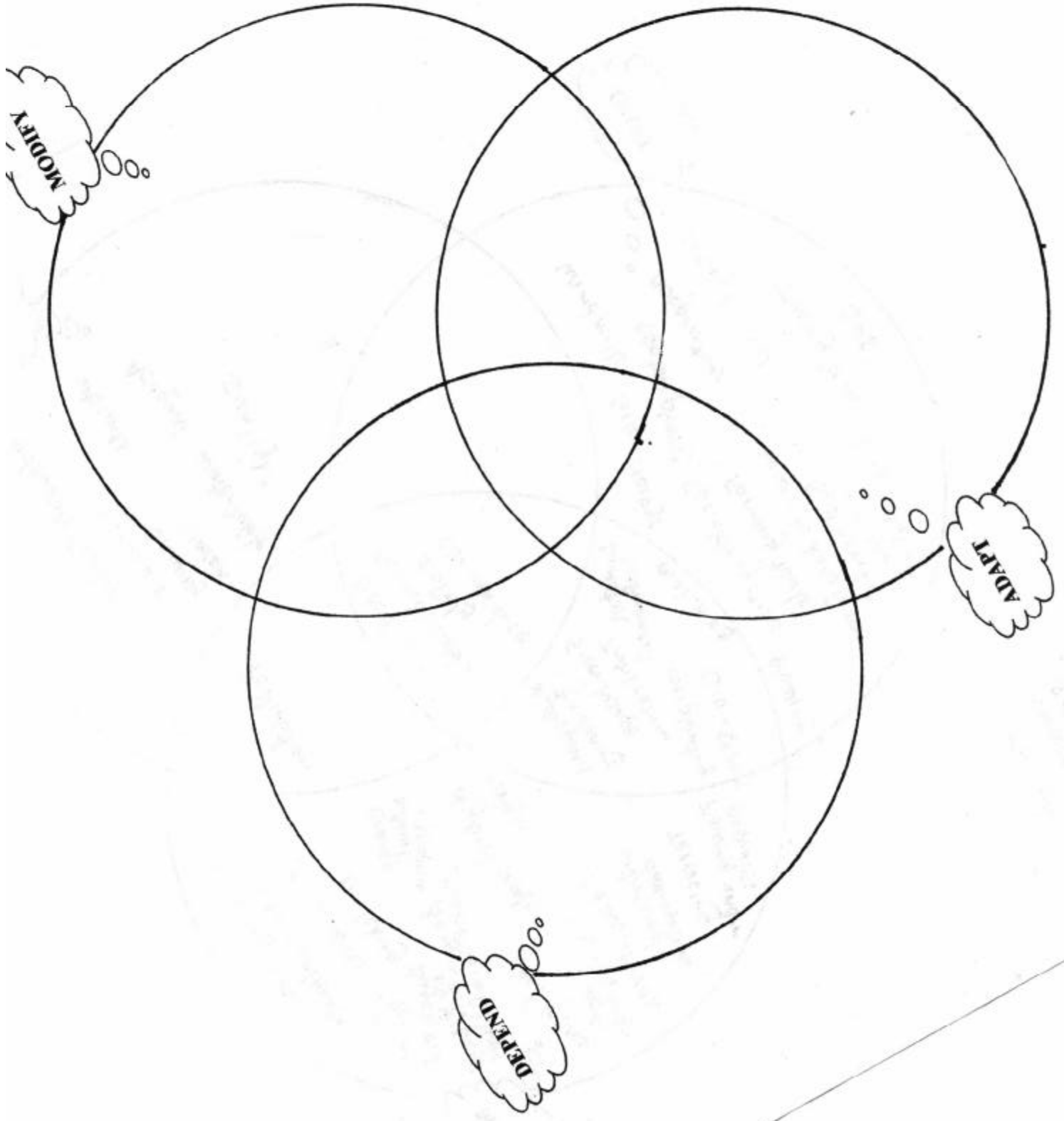
Plowing under Prairies = in order to create land to plant wanted crops these prairies with larger root systems needed to be eliminated.

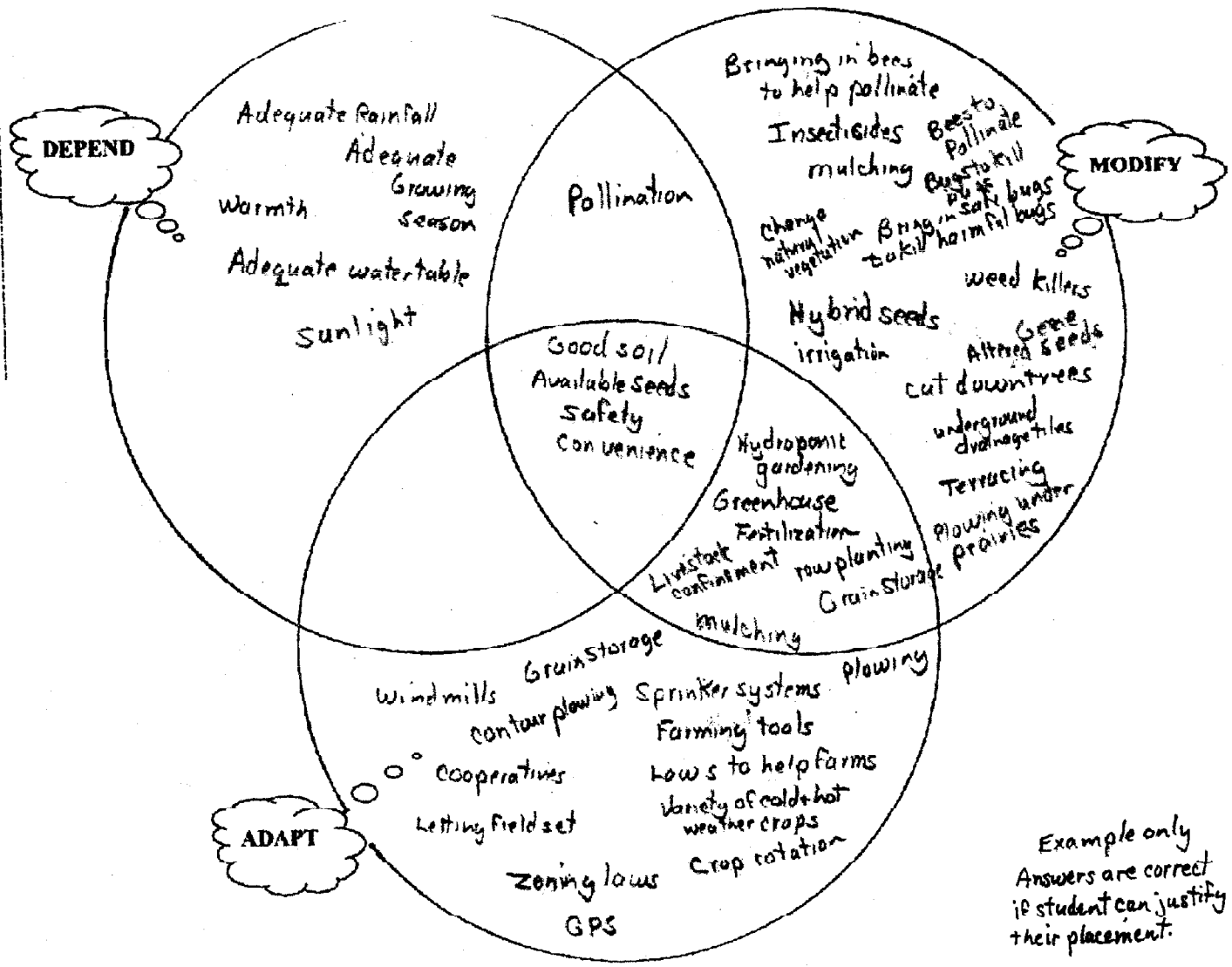
GPS (Global Positioning systems) = this satellite technology allows farmers to evaluate plant growth, spacing, etc. and saves farmers fertilizers, gas, etc.

Create three large topic cards for each group.



Neatness	0-2pts (1 pt. readable 2 pts. neatly done)
Clarity	0-3pts (Understands each of 3 areas)
Accuracy	0-3pts (Reasonable placement of items in each area)
Complete	<u>0-2pts</u> (1 pt. for 75% complete and 2pts. for totally complete) 10 points possible
Extra Credit	1 pt for 2 new agriculture card ideas on diagram (circled) 2 pts for more than 2 ideas





Example only
 Answers are correct
 if student can justify
 their placement.