District Cards Answer Key

District 7: Timber Key

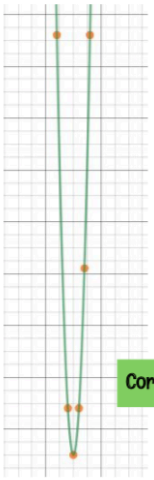
Vertex of Parabola: 25

$Y = a(x - h)^2 + k$ a = .09

Year	Timber Exports in Thousands of Tons
2020	106
2040	34
2050	25
2060	34
2070	61
2080	106
2100	250

Possible Student Procedure

1. Graph the points in the table.
2. Use the vertex in the graph to plug in for h and k.
3. Use a point in the table to plug in for x and y.
4. Solve for a.
5. Use equation to graph parabola.
6. Solve for 2100.



Correct Graph

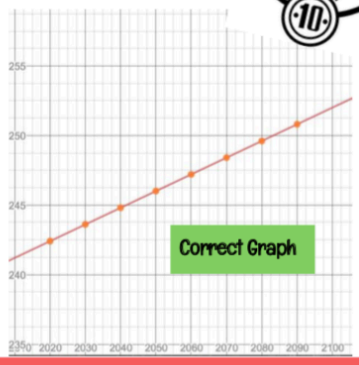
District 10: Livestock Key

Year	Cattle Head Exports by the Thousands
2020	242.4
2030	243.6
2040	244.8
2050	246
2060	247.2
2070	248.4
2080	249.6
2090	250.8
2100	252

Slope or m: .12

Possible Student Procedure

1. Graph the points in the table.
2. Locate the slope
   a. Rise over Run
   b. Calculator
3. Use the slope to predict 2100's numbers.
4. Write an equation to represent the graph.



Correct Graph

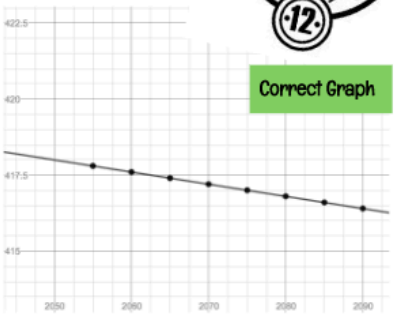
District 12: Coal Key

Year	Coal Exports by the Ton
2055	417.8
2060	417.6
2065	417.4
2070	417.2
2075	417
2080	416.8
2085	416.6
2090	416.4
2095	416.2

Slope or m: -.04 b: 500

Possible Student Procedure

1. Graph the points in the table.
2. Locate the slope
   a. Rise over Run
   b. Calculator
3. Use the slope and a point in the table to solve for b.
4. Use the equation to predict the year 2095.
5. Write an equation to represent the graph.



Correct Graph

ARIZONA GEOGRAPHIC ALLIANCE

Natural Resources of Panem Answer Key

Directions:

1. Each group will receive a Panem District Card,
2. Cards will provide a data table and basic information about the District and how it supports the Capitol.
3. In your groups, work collaboratively to answer the questions below.
4. You may use a calculator and any tools needed to support your thinking and process.

District #: _____ will vary

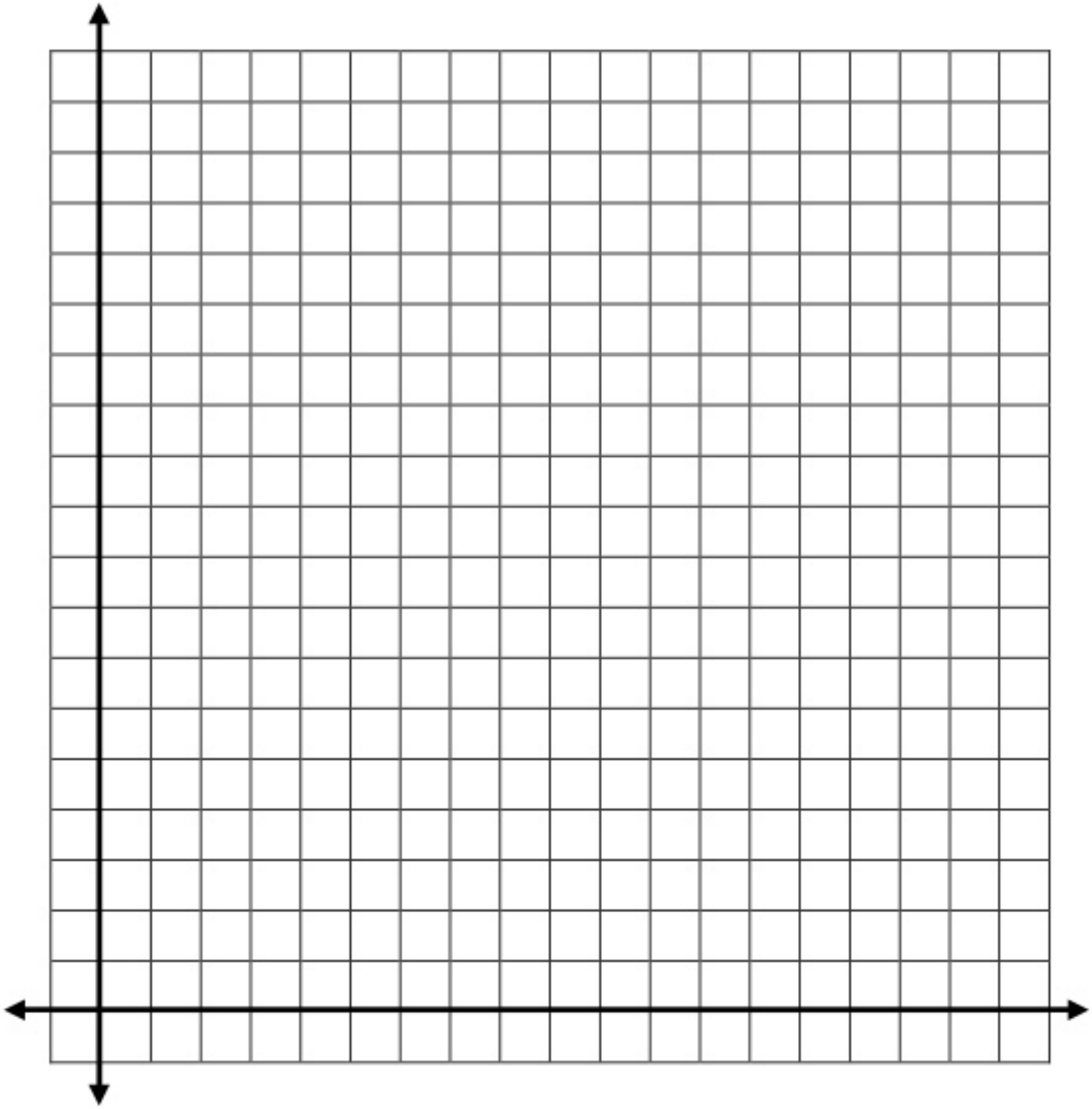
Industry/ Natural Resource: __ will vary

Generalizations about the Data Provided:

Student answers will vary. Ideally, we're looking for trends such as….

- Production is increasing over time.
- Production is decreasing over time.
- Production is inconsistent.
- Production drops and then recovers.
- Also, ideas as to why production is trending this way such as…
  - ….. has an abundance of resources
  - ….. is managing their resources well.
  - ….. had bad weather for a few years and production slowed

Graph: You may use this one, or paste your own on TOP! See District Cards Answer Key



ARIZONA GEOGRAPHIC ALLIANCE

Session 1: Exit Ticket Answer Key

Directions: Answer the following question using complete sentences. Be sure to provide support for your claim(s).

Why do you feel the Capitol divided the old states into “Districts” with a focus on natural resources?

Using the checklist below for grading, student answers may vary but should be reasonable and explained with relevant details.

Success Criteria for Grading

- ☐ I have answered the question. (1 point)
- ☐ I have provided at least 2 reasons to support my response. (2 points)
- ☐ I have used at least 2 of my vocabulary words accurately in my response. (1 point)
- ☐ I have used complete sentences in my response. (1 point)

ARIZONA GEOGRAPHIC ALLIANCE

End Assessment Answer Key

Directions: Answer the following using complete sentences. Be sure to provide support for your claim.

1. President Snow has declared District 11 will be split in 2 Districts. The Western side of the Mississippi (District 11.1) will continue to farm and provide agriculture for the Capitol. The Eastern side of the Mississippi (District 11.2) will now focus on oil production. How might this split of the larger District 11 impact the region and its surrounding environment? (5 points)

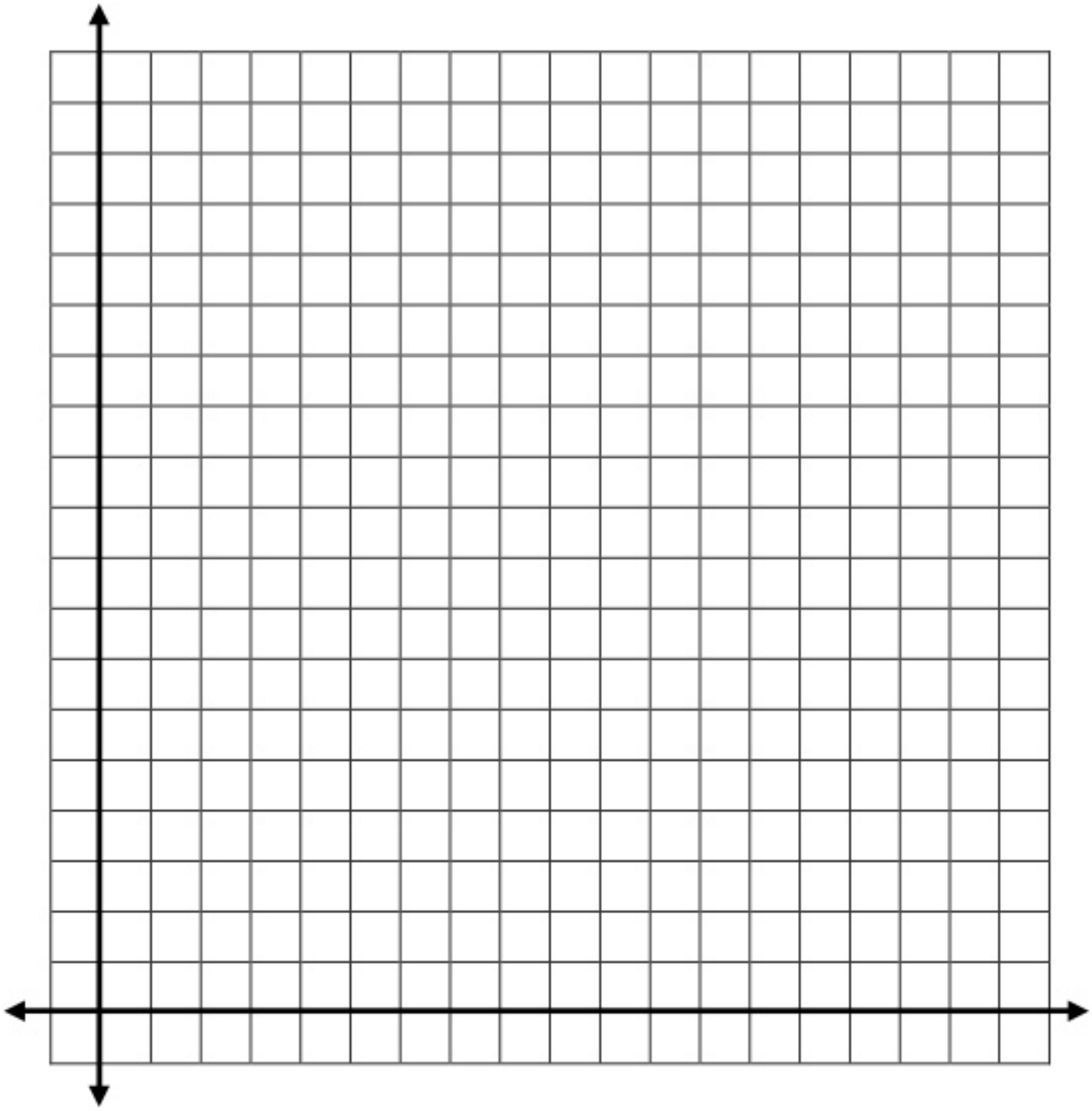
Using the checklist below for grading, student answers may vary but should be reasonable and explained with relevant details

Success Criteria for Grading

- ☐ I have answered the question. (1 point)
- ☐ I have provided at least 2 reasons to support my response. (2 points)
- ☐ I have used at least 2 of my vocabulary words accurately in my response. (1 point)
- ☐ I have used complete sentences in my response. (1 point)

2. In District 11.2, the Capitol has tracked the first 12 months of the oil barrel shipments they have received. Based on the table, please complete the following for the Capitol's analysis: (15 points)
    a. A graph of oil production. (9 points)
    b. An algebraic expression to represent the trend. (2 points)
    c. A prediction for the oil production (if the data continues at this rate for the end of the 2nd year. (2 points)
    d. An explanation on how I know the above is correct. (2 points)

- Titles may vary, but should include District 11.2 oil production.



ARIZONA GEOGRAPHIC ALLIANCE

- X axis = Month and Y= Oil Barrels by thousands
  - Students should see they need to count by different values along x and y axis. As long as their values are consistent for each axis, use your discretion when grading points accuracy.
  - Points and lines will vary based on how students label. Line should slope up to the right.
- Expression should be y= 2x + 4
- Students can plug in ANY coordinate pair from the table to prove this to be true.
- Prediction for the 2nd year should be 52 thousand barrels.
- Students can prove this prediction by continuing the table until 24 months, or by solving for y in their expression.
- Students should explain in words how they solved the problem. Teacher discretion used to award points for explanation.

Success Criteria for Grading

☐	I have titled my graph.	(1 point)
☐	I have labeled my x and y axis	(2 points)
☐	I have graphed the points correctly	(5 points)
☐	I have connected the dots on my graph.	(1 point)
☐	I have written an expression using variables for x and y	(1 point)
☐	I have proven my expression to be true	(1 point)
☐	I have made a prediction for the 2nd year of oil production	(1 point)
☐	I have proven my prediction for the 2nd year of oil production	(1 point)
☐	I have explained how I know my information to be true	(2 points)

Vocabulary Test Answer Key

__D__	**1. linear function**
__E__	**2. natural resource**
__C__	**3. thermal expansion**
__B__	**4. cost benefit analysis**
__A__	**5. economic advantage**