USING MAPS AND GLOBES

Grade Level or Special Area: 4th Grade

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Length of Unit: Five lessons (approximately one week (five days); one day = 45 minutes)

I. ABSTRACT

This unit is intended to provide fourth graders with an overview to using maps and globes and to provide teachers with lessons to cover the requirements in the *Core Knowledge Sequence*. Through reading, class discussion, and activities, the students will gain a foundational knowledge of how to use maps and globes. This unit uses a variety of map skills, including measuring distances using map scales, finding locations using latitude and longitude, and working with physical maps. Students will also develop a Geography copybook (or notebook).

II. OVERVIEW

A. Concept Objectives
   1. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments. (CO Geography Standard One)
   2. Students recognize how to measure various distances using map scales. (Colorado Geography Standard 4.1.1.A)
   3. Students recognize how to read maps and globes using longitude and latitude, coordinates, degrees. (Colorado Geography Standard 4.1.1.B)
   4. Students understand meridians and time zones (the International Date Line). (Colorado Geography Standard 4.1.1.C)
   5. Students understand relief maps. (Colorado Geography Standard 4.1.1.D)

B. Content from the *Core Knowledge Sequence*
   1. Fourth Grade: History and Geography: World History and Geography (page 91)
      a. Spatial Sense (Working with Maps, Globes, and Other Geographic Tools)
         i. Measure distances using map scales
         ii. Read maps and globes using longitude and latitude, coordinates, degrees
         iii. Prime Meridian (0 degrees); Greenwich, England; 180° line (International Date Line)
         iv. Relief maps: elevations and depressions

C. Skill Objectives
   1. Students will use a scale to calculate the differences in miles from one point on a map to another.
   2. Students will use a map to determine different routes from one place to another.
   3. Students will locate the Equator, Prime Meridian, and International Date Line on a map.
   4. Students will locate the Northern, Southern, Western, and Eastern hemispheres on a map.
   5. Students will answers questions about latitude and longitude.
   6. Students will locate different cities in the Unites States using lines of latitude and longitude.
   7. Students will use number and letter coordinates to locate specific items on a map.
   8. Students will locate different landforms on a physical map.
   9. Students will use a map's key to identify different elevations on a map.

10. Students will identify correct answers to matching questions.
11. Students will correctly label the Prime Meridian, Equator, North and South Poles, and Northern and Southern Hemispheres on a globe.
12. Students will use a scale to measure distances on a map.
13. Students will create a map key and shade various elevations on a physical map.
14. Students will identify lines of longitude and latitude and use them to place items on a map.

III. BACKGROUND KNOWLEDGE

A. For Teachers
   1. Hirsch, E. D. Jr. *Pearson Learning Core Knowledge History and Geography Level Four*
   2. Hirsch, E. D. Jr. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide*
   3. Hirsch, E. D. Jr. *What Your Fourth Grader Needs to Know*

B. For Students
   1. Kindergarten: World History and Geography: Spatial Sense, page 11
   2. First Grade: World History and Geography: Spatial Sense, page 27
   3. Second Grade: World History and Geography: Spatial Sense, page 47
   4. Third Grade: World History and Geography: Spatial Sense, page 69

IV. RESOURCES

A. *Pearson Learning Core Knowledge History and Geography Level Four* by E. D. Hirsch Jr.-a class set is preferable, but at least one copy for the teacher is needed (all lessons except Lesson Five)
B. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide* by E. D. Hirsch Jr. (all lessons except Lesson Five)
C. World map (Lesson One)
D. Globe (Lessons One and Two)
E. Atlas (*DK Student Atlas* or *The Reader's Digest Children's Atlas of the World* is recommended) (Lesson Three)
F. Student copybooks-these are black and white composition books created by the students as individual Geography books; a folder with brads inside will also work (every lesson except Lesson Five)

V. LESSONS

Lesson One: Measuring Distances on a Map (approximately 45 minutes)

A. *Daily Objectives*
   1. Concept Objective(s)
      a. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
      b. Students recognize how to measure various distances using map scales.
   2. Lesson Content
      a. Measure distances using map scales.
   3. Skill Objective(s)
      a. Students will use a scale to calculate the differences in miles from one point on a map to another.
      b. Students will use a map to determine different routes from one place to another.

B. *Materials*

1. Globe
2. World map
3. Overhead projector
4. Geography copybooks
5. *Pearson Learning Core Knowledge History and Geography Level Four* (one copy per student)
6. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide* (to help guide and facilitate discussion if needed)
7. Appendix A (one per student – use only if you are not waiting until the end of the unit to grade students' work)
8. Appendix B (one copy made into a transparency)
9. Appendix C (one copy per special education student)
10. Appendix D (one copy per student)
11. Appendix E (one copy for the teacher; needed if you are not waiting until the end of the unit to grade students' work)
12. Appendix O (one per student; if doing the culminating activity)
13. Scissors
14. Glue
15. Ruler
16. String or yarn (cut into 12 inch lengths; one per student)

C. *Key Vocabulary*

1. A *compass rose* is a symbol on a map that shows directions north, south, east, and west.
2. The *map key* is the table or chart that helps you t decode a map; the key is usually found in one of the corners of the map.
3. The *map scale* shows the relationship or proportion between the distance as shown on a map and the actual distance on the ground.

D. *Procedures/Activities*

1. Begin by showing students a globe. Ask them to make observations about the globe (these will vary by class). Ask them to identify the shape of the globe (a sphere).
2. Show them a world map. Again, ask them to make observations about the map (these will vary by class). Ask them to compare and contrast the globe and the map (they both show the world, but the map is flat and the globe is three-dimensional. The map shows the world all at once, where you have to turn the globe to see the entire world).
3. Orally review what the students have already learned about maps and globes (this will vary by class according to the amount of background knowledge students have).
4. Put Appendix B on the overhead. This is an "AQUA" chart. The A stands for what students Already know about maps and globes, the Q stands for any Questions they may have, the U stands for new Understandings they gain, and the final A stands for Applications of this knowledge. Have students copy the chart into their copybooks. As a class, fill out the first two sections by letting the students state what they already know about maps and globes and what they hope to learn in this unit (again, this will vary by class according to the amount of background knowledge students have). The third and fourth sections will be filled in daily as the unit progresses.
5. On the next page of their copybooks, have students create a vocabulary page for this unit (they may need two pages for this). On the overhead, list the day's

vocabulary words and their definitions. Talk about the words to make sure students understand them. **Special Education Accommodation:** Have the vocabulary words and definitions typed out for the student and glue this page in his copybook (use Appendix C).

6. Pass out the pieces of yarn or string to students. They will all also need a ruler.
7. Read pages 2-5 ("Measuring Distances on a Map") in *Pearson Learning Core Knowledge History and Geography Level Four* book. As you read, discuss the following questions: (note – the *Pearson Learning Core Knowledge Teacher's Guide on Using Maps* is a great resource to help facilitate discussion)
   a. What is a map? (A drawing of a real place.)
   b. What can you tell by using the scale on a map? (The distance from place to place.)
   c. What does a map's legend contain? (The symbols for items on the map, such as towns, highways, schools, or mountains.)
   d. What does a compass rose show? (Directions – north, south, east, and west.)
8. Make sure that you take time to allow the students to measure to length of Paul Revere's ride, using both a ruler and string, as mentioned on page 3 of this chapter.
9. Review the AQUA chart to see if any information needs to be added. (Note: this may vary by class depending on the amount of prior knowledge held by the students.) In addition to adding the information to the class chart, have students add it to their copybooks (or notebooks).
10. Pass out Appendix D to the students. Have them trim down the sides and glue into their copybooks (if using folders, three hole punch and clip into the middle of the folders). Have the students complete these worksheets on their own or with a partner. If not finished in class, assign as homework. **Note** – there are two worksheets included on scale, with the first being significantly easier than the second. Use your best judgment in assigning these to students. Depending on their abilities, the students can complete both of the worksheets or only one of them.
11. If you want the students to do the culminating activity, then pass out Appendix O to students now. This contains the information they will need to complete this project. This is a project that will be completed at home and the students should have at least one week, if not two, to work on it.

E. *Assessment/Evaluation*

1. The discussion generated during this lesson will serve as a way for the teacher to assess the students' understanding of measuring distance on a map.
2. Students will be assessed on their vocabulary page at the end of this unit (use Appendix A to grade).
3. Students will be assessed on the worksheet pages they completed in their Geography copybooks (use Appendix E to grade). Note – copybooks can either be graded every day, or collected and graded at the end of the unit.

Lesson Two: Longitude and Latitude (approximately 45 minutes)

A. *Daily Objectives*

1. Concept Objective(s)
   a. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.

b. Students understand meridians and time zones (the International Date Line).

2. Lesson Content
   a. Read maps and globes using longitude and latitude, coordinates, degrees
   b. Prime Meridian (0 degrees); Greenwich, England; 180° line (International Date Line)
3. Skill Objective(s)
   a. Students will locate the Equator, Prime Meridian, and International Date Line on a map.
   b. Students will locate the Northern, Southern, Western, and Eastern hemispheres on a map.
   c. Students will answers questions about latitude and longitude.

B. *Materials*
1. Globe
2. Overhead projector
3. Geography copybooks
4. *Pearson Learning Core Knowledge History and Geography Level Four* (one copy per student)
5. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide* (to help guide and facilitate discussion if needed)
6. Appendix A (one per student – use only if you are not waiting until the end of the unit to grade students' work)
7. Appendix F (one per student)
8. Appendix G (one copy for the teacher; needed if you are not waiting until the end of the unit to grade students' work)
9. Scissors
10. Glue
11. Colored pencils

C. *Key Vocabulary*
1. An *axis* is an imaginary straight line that runs through a turning object. (**Note –** only use this vocabulary word if you are reading the whole chapter on time zones.)
2. *Coordinates* are sets of numbers that help identify a specific place on a globe or map.
3. Half of a sphere is called a *hemisphere*.
4. The *International Date Line* is an imaginary line that marks a place on Earth where each new day begins. It is the same as the 180° meridian.
5. Lines that measure distance in degrees north and south of the Equator are called lines of *latitude,* or *parallels*.
6. Lines that measure distance in degrees east and west of the Prime Meridian are called lines of *longitude*, or *meridians*.
7. The line of 0° longitude that runs through Greenwich, England is called the *Prime Meridian*.

D. *Procedures/Activities*
1. As a review of yesterday's lesson, review what a map scale shows (the relationship between the actual distance on the ground and the distance shown on a map) and what maps are used for (to locate roads or buildings, to plan a trip, to find your way around town, etc.).
2. On the overhead, list the day's vocabulary words and definitions. Talk about the words to make sure the students understand them. Tell students that the word latitude is derived from the Latin word "latus" meaning wide, and the worn

longitude is derived from the Latin word "longus" meaning length. Have the students copy the words and definitions into their reading folders. **Special Education Accommodation:** Have him refer to Appendix C in his Geography copybook.

3. Read pages 6-10 ("Latitude and Longitude") in *Pearson Learning Core Knowledge History and Geography Level Four* book. As you read, discuss the following: (note – the *Pearson Learning Core Knowledge Teacher's Guide on Using Maps* is a great resource to help facilitate discussion). As you read about latitude, longitude and hemispheres, be sure to point out these items on the globe.
   a. Why are the lines of latitude also called parallels? (Because they are straight lines that never meet or cross.)
   b. Is the Equator a line of latitude or longitude? Why? (Latitude; because it runs horizontally, or east to west.)
   c. Where is most of the United States located? (Between 25° N and 47° N.
   d. Where does the Prime Meridian run through? (Greenwich, England.)
   e. What is a coordinate? (The place where a line of latitude and a line of longitude cross, or intersect.)
4. Also read page 15 ("A Puzzle about Time" and "The International Date Line") in *Pearson Learning Core Knowledge History and Geography Level Four* book. **Note –** if time allows, you may wish to read this entire chapter ("Time Zones") with your students, but this information is not included in the *Core Knowledge Scope and Sequence*, so it does not have to be covered. As you read, discuss the following: (note – the *Pearson Learning Core Knowledge Teacher's Guide on Using Maps* is a great resource to help facilitate discussion)
   a. How was the puzzle of the two children explained? (One child was born on the east side of the International Date Line and the other was born on the west side of the International Date Line.)
   b. Where is the International Date Line located? (Along the 180° meridian in most places.)
   c. Why does the International Date Line curve around land? (So that the people in a country or city are not always a day behind the others in that country or city.)
5. Review the AQUA chart to see if any information needs to be added. (Note: this may vary by class depending on the amount of prior knowledge held by the students.) In addition to adding the information to the class chart, have students add it to their copybooks (or notebooks).
6. Pass out Appendix F to the students. Have them trim down the sides and glue into their copybooks (if using folders, three hole punch and clip into the middle of the folders). Have the students complete these worksheets on their own or with a partner. If not finished in class, assign as homework.

E. *Assessment/Evaluation*

1. The discussion generated during this lesson will serve as a way for the teacher to assess the students' understanding of latitude and longitude.
2. Students will be assessed on their vocabulary page at the end of this unit (use Appendix A to grade).
3. Students will be assessed on the worksheet pages they completed in their Geography copybooks (use Appendix G to grade). Note – copyooks can either be graded every day, or collected and graded at the end of the unit.

Lesson Three: Locating Places on a Map (approximately 45 minutes)

A. *Daily Objectives*
   1. Concept Objective(s)
      a. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
      b. Students recognize how to read maps and globes using longitude and latitude, coordinates, degrees.
   2. Lesson Content
      a. Read maps and globes using longitude and latitude, coordinates, degrees
      b. Prime Meridian (0 degrees); Greenwich, England; 180° line (International Date Line)
   3. Skill Objective(s)
      a. Students will locate different cities in the Unites States using lines of latitude and longitude.
      b. Students will use number and letter coordinates to locate specific items on a map.

B. *Materials*
   1. Overhead projector
   2. Geography copybooks
   3. *Pearson Learning Core Knowledge History and Geography Level Four* (one copy per student)
   4. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide* (to help guide and facilitate discussion if needed)
   5. An atlas as an example to show the class (*DK Student Atlas* or *The Reader's Digest Children's Atlas of the World* are recommended)
   6. Appendix A (one per student – use only if you are not waiting until the end of the unit to grade students' work)
   7. Appendix H (one per student)
   8. Appendix I (one copy for the teacher; needed if not waiting until the end of the unit to grade students' work)
   9. Scissors
   10. Glue
   11. Colored pencils

C. *Key Vocabulary*
   1. An *atlas* is a book of maps.
   2. *Minutes* are units of space used to measure distance between lines of latitude and longitude.

D. *Procedures/Activities*
   1. As a quick review from yesterday, ask the students to define latitude (lines that run east-west on a map or globe and measure degrees north and south of the Equator) and longitude (lines that run north-south on a map or globe and measure degrees east and west of the Prime Meridian.
   2. Hold up the atlas. Ask students if they know what it is. Thumb through and show them the various maps inside. Tell them we will be talking about atlases and maps in today's lesson.
   3. On the overhead, list the day's vocabulary words and definitions. Talk about the words to make sure the students understand them. Have the students copy the words and definitions into their reading folders. **Special Education Accommodation:** Have him refer to Appendix C in his Geography copybook.

4. Read pages 11-14 ("Finding a Place") in *Pearson Learning Core Knowledge History and Geography Level Four* book. As you read, discuss the following questions: (note – the *Pearson Learning Core Knowledge Teacher's Guide on Using Maps* is a great resource to help facilitate discussion)
    e. Why is it important to know both latitude and longitude when finding a place on a map? (To pinpoint a specific place, you need its "address," or its distance from both the Equator and the Prime Meridian.)
    f. How many minutes are in one degree? Does this relate to anything you already know about time? (60 minutes; there are 60 minutes in an hour.)
    g. What kinds of coordinates are used on road maps in place of latitude and longitude? (Number and letter coordinates.)
5. Review the AQUA chart to see if any information needs to be added. (Note: this may vary by class depending on the amount of prior knowledge held by the students.) In addition to adding the information to the class chart, have students add it to their copybooks (or notebooks).
6. Pass out Appendix H to the students. Have them trim down the sides and glue into their copybooks (if using folders, three hole punch and clip into the middle of the folders). Have the students complete these worksheets on their own or with a partner. If not finished in class, assign as homework.

E. *Assessment/Evaluation*
1. The discussion generated during this lesson will serve as a way for the teacher to assess the students' understanding of how to use longitude, latitude, and coordinates to locate a place on a map.
2. Students will be assessed on their vocabulary page at the end of this unit (use Appendix A to grade).
3. Students will be assessed on the worksheet pages they completed in their Geography copybooks (use Appendix I to grade). Note – copybooks can either be graded every day, or collected and graded at the end of the unit.

Lesson Four: How to Read Physical (Relief) Maps (approximately 45 minutes)

A. *Daily Objectives*
1. Concept Objective(s)
    a. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
    b. Students understand how to use relief maps.
2. Lesson Content
    a. Relief maps: elevations and depressions
3. Skill Objective(s)
    a. Students will locate different landforms on a physical map.
    b. Students will use a map's key to identify different elevations on a map.

B. *Materials*
1. Overhead projector
2. Geography copybooks
3. *Pearson Learning Core Knowledge History and Geography Level Four* (one copy per student)
4. *Pearson Learning Core Knowledge History and Geography: Using Maps Teacher's Guide* (to help guide and facilitate discussion if needed)
5. Appendix A (one per student – use only if you are not waiting until the end of the unit to grade students' work)
6. Appendix J (one per student)

7. Appendix K (one copy for the teacher; needed if not waiting until the end of the unit to grade students' work)
8. Appendix L (one per student)
9. Scissors
10. Glue
11. Colored pencils

C. *Key Vocabulary*

1. *Elevation* is the height of something; on maps, elevation is shown as the number of feet above or below sea level (areas below sea levels may also referred to as depressions).
2. A *physical map* is a type of map that shows hills, mountains, valleys, and other features of the land. This can also be referred to as a relief map.

D. *Procedures/Activities*

1. As a quick review have a few students share about their worksheets from yesterday. Do they all agree on where the treasure chest was found? Do they all have the landmarks drawn in the same place? Ask which they found easier – using latitude and longitude or number letter coordinates to find a place. (These answers will vary by students and class.)
2. On the overhead, list the day's vocabulary words and definitions. Talk about the words to make sure the students understand them. Have the students copy the words and definitions into their reading folders. **Special Education Accommodation:** Have him refer to Appendix C in his Geography copybook or notebook.
3. Read pages 19-22 ("How to Read Physical Maps") in *Pearson Learning Core Knowledge History and Geography Level Four* book. As you read, discuss the following questions: (note – the *Pearson Learning Core Knowledge Teacher's Guide on Using Maps* is a great resource to help facilitate discussion)
    a. What are some features of the land that can be shown in a physical map? (Hills, mountains, and valleys.)
    b. What does elevation show on a physical map? (How high the land is.)
    c. Why would it be a good idea to check out a physical map before you started on a hike from one place to another? (The physical map would show obstacles, such as canyons or mountains, which you may need to avoid on your hike.)
4. Review the AQUA chart to see if any information needs to be added. (Note: this may vary by class depending on the amount of prior knowledge held by the students.) In addition to adding the information to the class chart, have students add it to their copybooks.
5. Pass out Appendix J to the students. Have them trim down the sides and glue into their copybooks (if using folders, three hole punch and clip into the middle of the folders). Have the students complete these worksheets on their own or with a partner. If not finished in class, assign as homework.
6. Pass out Appendix L, the study guide for the test. If you want students to have more time to study, you may pass this out earlier in the unit. All the answers are in their Geography copybooks.

E. *Assessment/Evaluation*

1. The discussion generated during this lesson will serve as a way for the teacher to assess the students' understanding of how to read physical (relief) maps.
2. Students will be assessed on their vocabulary page at the end of this unit (use Appendix A to grade).

3. Students will be assessed on the worksheet pages they completed in their Geography copybooks (use Appendix K to grade). Note – copybooks can either be graded every day, or collected and graded at the end of the unit.

Lesson Five: Test (approximately 45 minutes)

A. *Daily Objectives*

1. Concept Objective(s)
   a. Students understand how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
   b. Students recognize how to measure various distances using map scales.
   c. Students recognize how to read maps and globes using longitude and latitude, coordinates, degrees.
   d. Students understand meridians and time zones (the International Date Line).
   e. Students understand how to use relief maps.
2. Lesson Content
   a. Measure distances using map scales.
   b. Read maps and globes using longitude and latitude, coordinates, degrees.
   c. Prime Meridian (0 degrees); Greenwich, England; 180° line (International Date Line)
   d. Relief maps: elevations and depressions
3. Skill Objective(s)
   a. Students will identify correct answers to matching questions.
   b. Students will correctly label the Prime Meridian, Equator, North and South Poles, and Northern and Southern Hemispheres on a globe.
   c. Students will use a scale to measure distances on a map.
   d. Students will create a map key and shade various elevations on a physical map.
   e. Students will identify lines of longitude and latitude and use them to place items on a map.

B. *Materials*

1. Appendices A, C, E, G, I, and K (use only if you have not yet graded students' Geography copybooks)
2. Colored pencils
3. Appendix M (one per student)
4. Appendix N (one copy for the teacher)

C. *Key Vocabulary*

None

D. *Procedures/Activities*

1. If you have not already done so, collect the students' Geography copybooks to grade.
2. Pass out the test to the students (Appendix M).
3. Review directions and answer any questions. **Special Education Accommodation:** Allow the student to take the test orally.
4. Collect and grade the tests at the end of the class period.

E. *Assessment/Evaluation*

1. Students will be assessed on the completion of their Geography copybooks (use Appendices A, C, E, G, I, and K to grade).
2. Students will be assessed by their correct responses on the test (use Appendix N to grade).

VI. CULMINATING ACTIVITY

A. The students will create a map of their neighborhood. This map should include their house, the school they attend, and other important landmarks (such as parks, libraries, restaurants, etc). They will need to include a compass rose, latitude and longitude or coordinate numbers and letters, a compass rose, and a map key. This is an at home project and the students should be given one to two weeks to complete it. Pass out Appendix O to students at the beginning of the lesson. Use Appendix A to grade. Allow students to share their maps with the class and then post then in your classroom in the hallway of your school. It is also fun to post a map of your town in the room and then use pins to locate the homes of your students.

VII. HANDOUTS/WORKSHEETS

A. Appendix A: Assessment Tools
B. Appendix B: AQUA Chart
C. Appendix C: Vocabulary Page for Special Education Students
D. Appendix D: Worksheets on Scale
E. Appendix E: Worksheets on Scale Answer Key
F. Appendix F: Worksheets on Latitude and Longitude
G. Appendix G: Worksheets on Latitude and Longitude Answer Key
H. Appendix H: Worksheets on Finding Places on a Map
I. Appendix I: Worksheets on Finding Places on a Map Answer Key
J. Appendix J: Worksheets on Physical Maps
K. Appendix K: Worksheets on Physical Maps Answer Key
L. Appendix L: Study Guide
M. Appendix M: Test
N. Appendix N: Test Answer Key
O. Appendix O: Culminating Activity Directions

VIII. BIBLIOGRAPHY

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Appendix A, page 1

Assessment Tools

(it may be helpful to look at Appendix C while grading this page)

Vocabulary Page Checklist	**Yes**	**No**
1. Fourteen vocabulary words are listed	_____	_____
2. The vocabulary words are all spelled correctly	_____	_____
3. Each vocabulary word has a correct definition	_____	_____
4. The writing is neat and legible	_____	_____

Assessment Tools

Culminating Activity – Map Rubric					
CATEGORY	**4**	**3**	**2**	**1**	**Points**
Landmarks	All seven landmarks are included – home, school, and at least five others.	Only five or six of the required landmarks are included.	Only two, three, or four of the required landmarks are included.	One or none of the required landmarks are included.	
Symbols	Every landmark has a symbol.	Only five or six of the landmarks have a symbol.	Only two, three, or four of the landmarks have a symbol.	One or none of the landmarks have a symbol.	
Map Key	The map key has each symbol represented.	The map key has only five or six symbols represented.	The map key has only two, three, or four symbols represented.	The map key has no or one symbols represented.	
Compass Rose	The compass rose has all four directions listed.	The compass rose has only two or three directions listed.	The compass rose has only one or two directions listed.	The compass rose has no directions listed; or it is missing.	
Neatness and Color	Work is neatly done and is brightly colored.	Work has one or two areas that are sloppy; it is not all colored.	Work has three or four areas that are sloppy; most of it is not colored.	Work is Illegible; it is not colored.	
Spelling	There are no spelling errors.	There is one spelling error.	There are two or three spelling errors.	There are more than three spelling errors.	
				Total →	
Teacher Comments					

Appendix B

AQUA Chart

A – Already know

Q – Questions

U – new Understandings

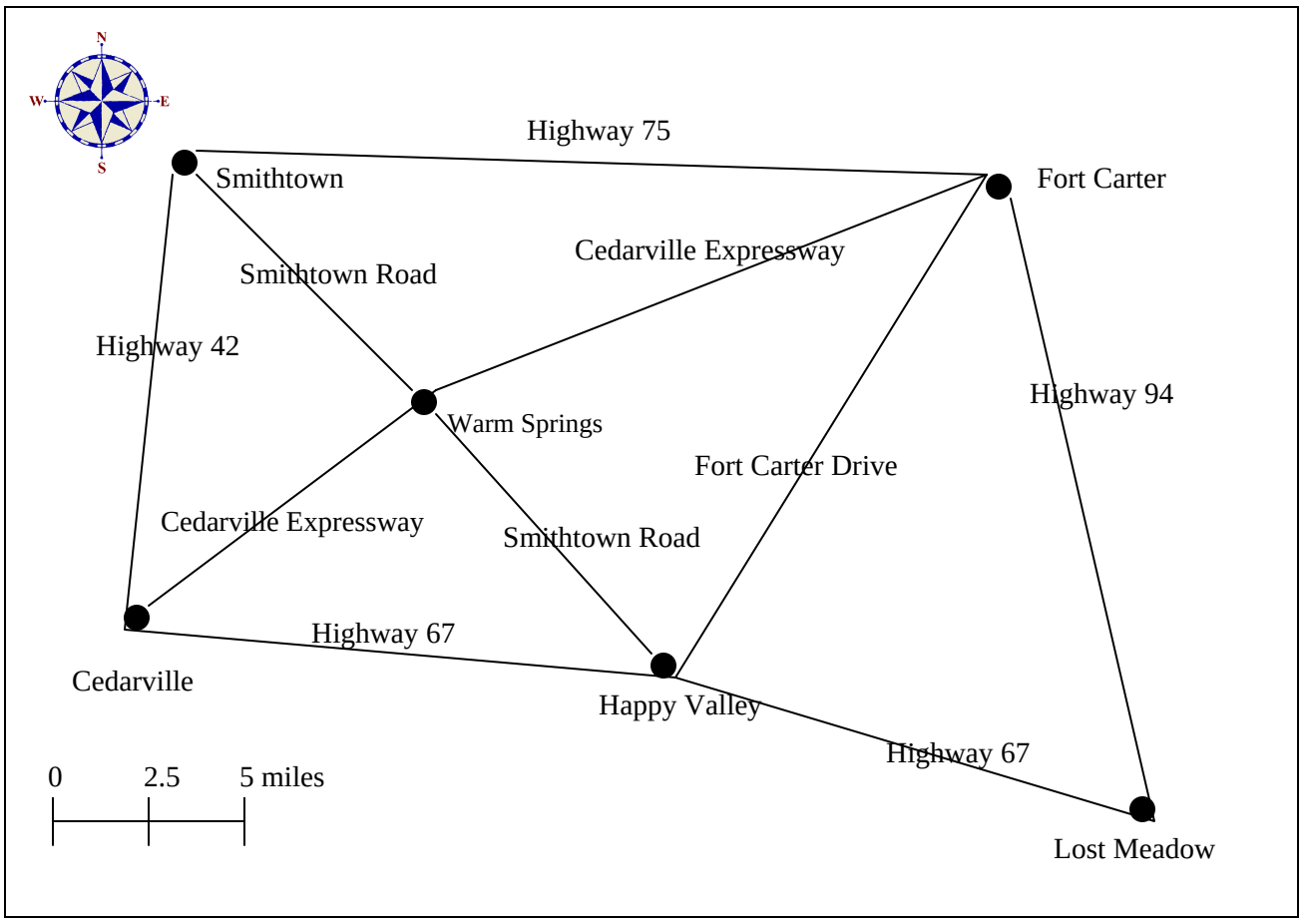
A - Application

Appendix C

Vocabulary Page for Special Education Students

1. *Compass rose* - a symbol on a map that shows directions north, south, east, and west
2. *Map key* - the table or chart that helps you t decode a map; the key is usually found in one of the corners of the map
3. *Map scale* - shows the relationship or proportion between the distance as shown on a map and the actual distance on the ground
4. *Axis* - an imaginary straight line that runs through a turning object
5. *Coordinates* - sets of numbers that help identify a specific place on a globe or map
6. *Hemisphere* - half of a sphere
7. *International Date Line* - an imaginary line that marks a place on Earth where each new day begins; it is the same as the 180° meridian
8. *Latitude* or *parallels* - lines that measure distance in degrees north and south of the Equator
9. *Longitude* or *meridians* - lines that measure distance in degrees east and west of the Prime Meridian
10. *Prime Meridian* - the line of 0° longitude that runs through Greenwich, England
11. *Atlas* - a book of maps
12. *Minutes* - units of space used to measure distance between lines of latitude and longitude
13. *Elevation* - the height of something; on maps elevation is shown as the number of feet above or below sea level (areas below sea levels may also referred to as depressions)
14. *Physical map* - a type of map that shows hills, mountains, valleys, and other features of the land; this can also be referred to as a relief map

Worksheets on Scale



Use your ruler or a piece of string to answer the following questions:

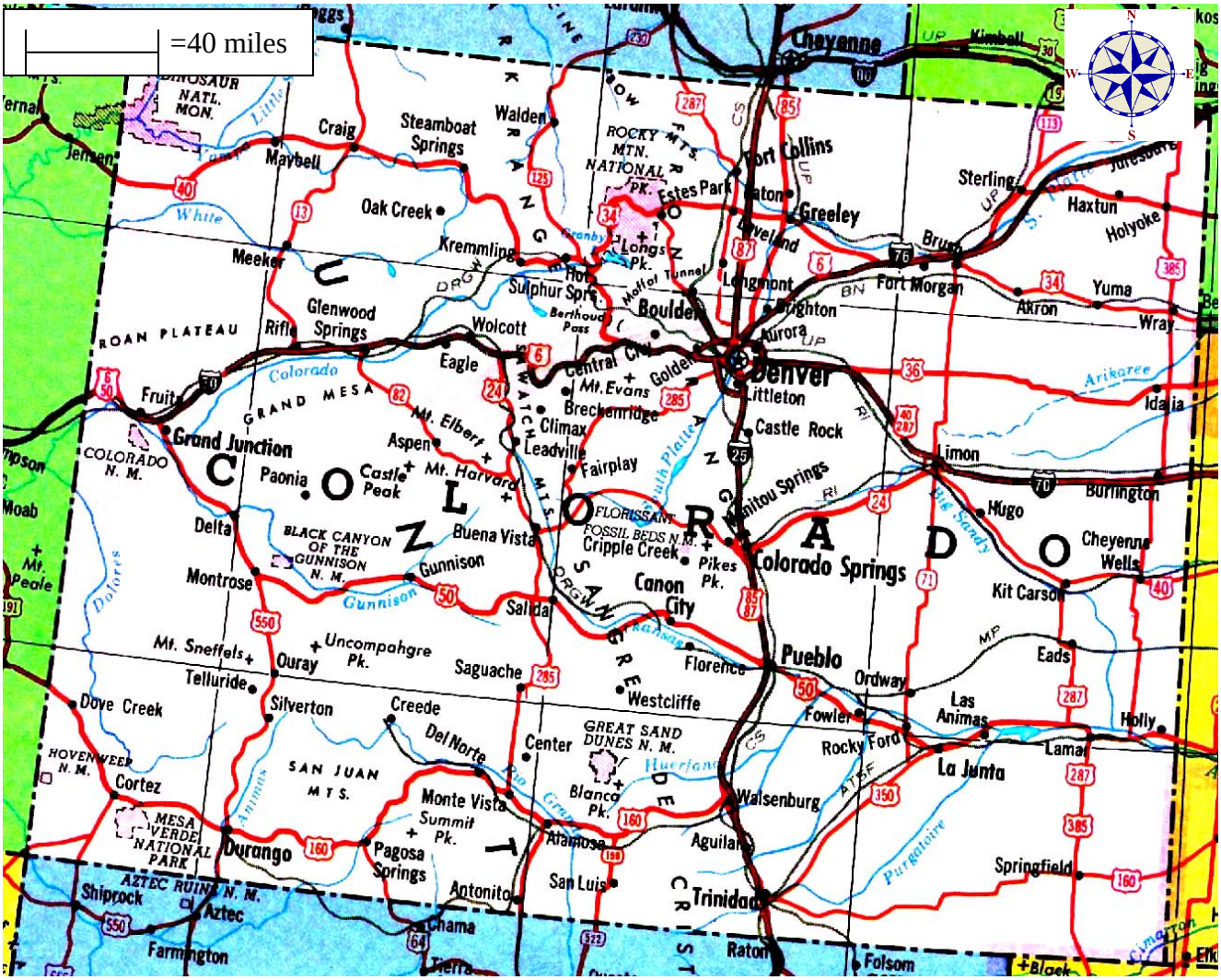
1. According to the scale, how long is five miles on the map? _____
2. Driving on Highway 67, how many miles is it from Cedarville to Lost Meadow? _____
3. Name two routes you could take from Happy Valley to Smithtown.

   _____ or

   _____
4. Which route would be shorter?_____ By how much? _____
5. How much closer is Warm Spring to Smithtown than Fort Carter? _____
6. Is Fort Carter closer to Lost Meadow or Smithtown? _____
7. You live in Happy Valley. You want to visit friends in Cedarville, Smithtown, and Fort Carter. On the way there, you want to only drive on highways. Coming home, you will travel on Fort Carter Drive. How many miles will you have traveled by the time you return home? _____
8. What is the shortest distance from Lost Meadow to Warm Springs?

Worksheets on Scale

(map from http://freepages.genealogy.rootsweb.com/~monticue/photogallery/photo20308/colorado_map.jpg**)**



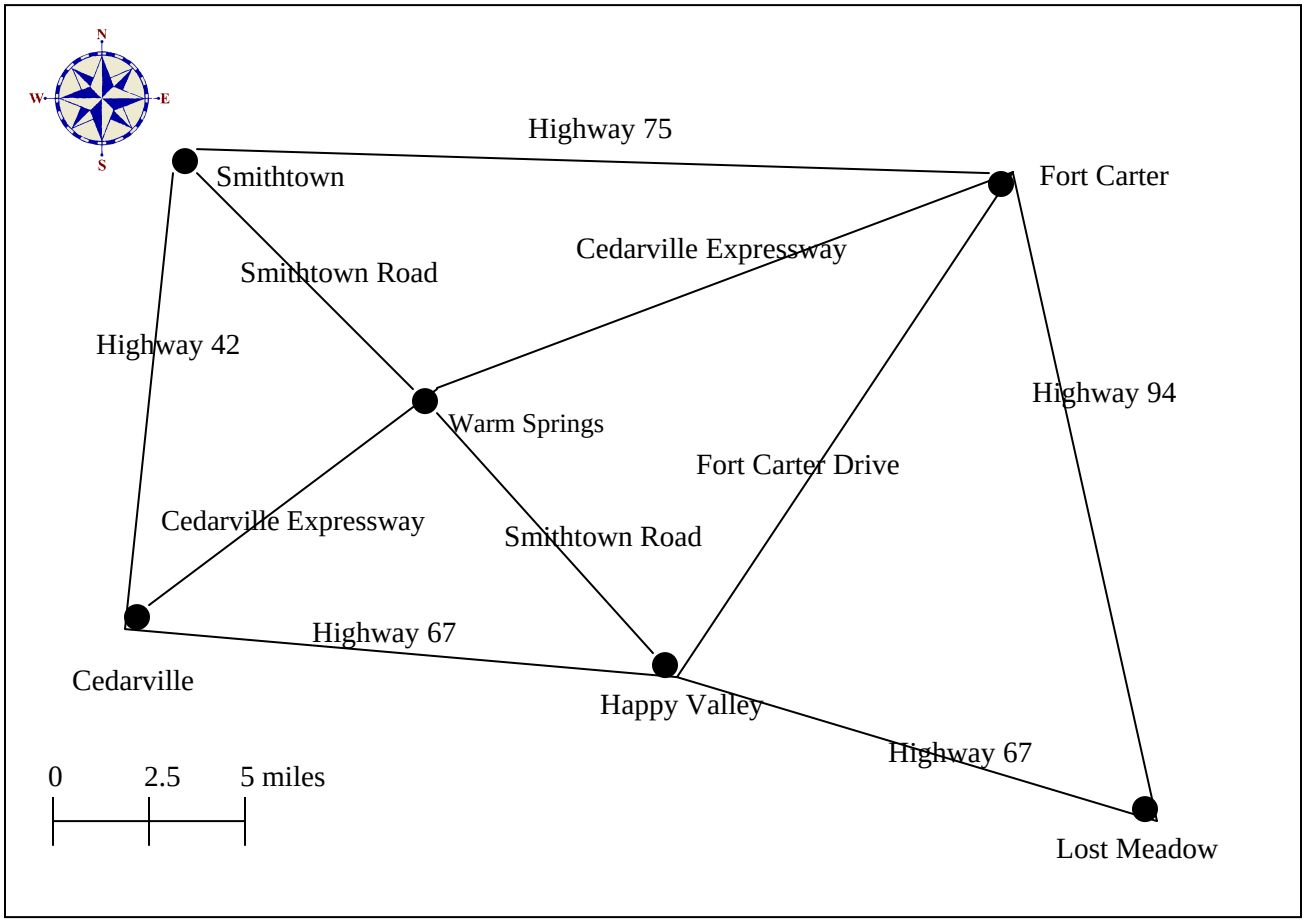
Use a ruler and a piece of string to answer the following questions:

1. According to the scale, how far is forty miles on the map?_____
2. How far is it from Denver to Pueblo?_____
3. What road would you take from Walsenburg to Durango?_____
4. Is Colorado Springs closer to Denver or Pueblo? _____ By how many miles?_____
5. You live in Burlington and want to visit friends in Denver and Colorado Springs. Plan out the best route you will take there and back. _____

   _____
6. Traveling on I-70 and I-76, how many miles is it from Grand Junction to Sterling and back?_____
7. Is La Junta closer to Trinidad or Pueblo? _____ By how many miles?_____
8. How far would you have to drive from Craig to the Utah border? _____

Appendix E, page 1

Worksheets on Scale Answer Key

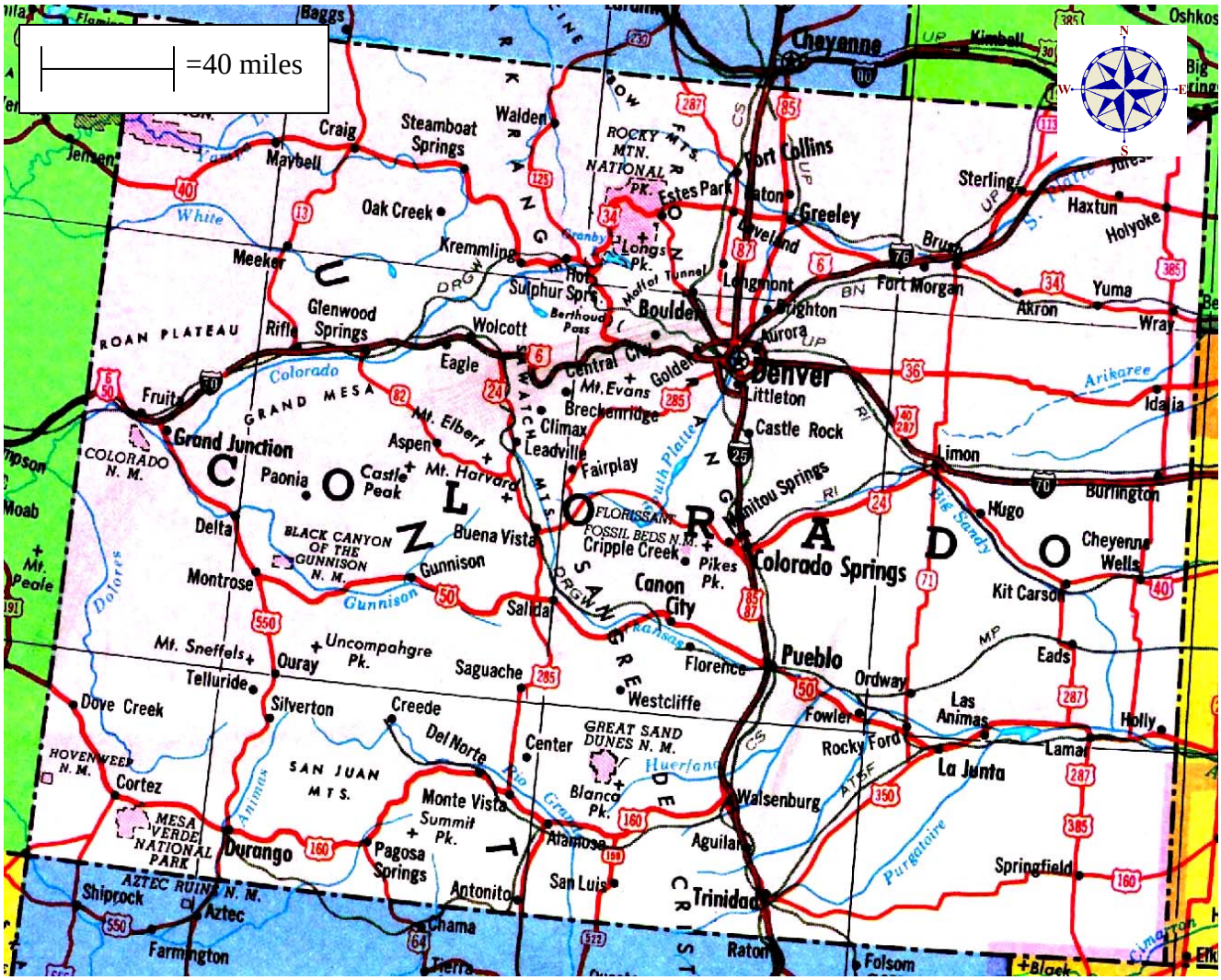


Use your ruler or a piece of string to answer the following questions: **(each answer is worth 1 point; 10 total; distances are approximate, make sure students are within a mile or two of the answers)**

1. According to the scale, how long is five miles on the map? _____**1 inch**_____
2. Driving on Highway 67, how many miles is it from Cedarville to Lost Meadow? ____**27.5 miles**_____
3. Name two routes you could take from Happy Valley to Smithtown. __**Smithtown Road** or __**Highway 67 and Highway 42**_____
4. Which route would be shorter?___**Smithtown Road**_____ By how much? _**about 9.5 miles**_____
5. How much closer is Warm Spring to Smithtown than Fort Carter? _**about 8 miles**_____
6. Is Fort Carter closer to Lost Meadow or Smithtown? __**Lost Meadow**_____
7. You live in Happy Valley. You want to visit friends in Cedarville, Smithtown, and Fort Carter. On the way there, you want to only drive on highways. Coming home, you will travel on Fort Carter Drive. How many miles will you have traveled by the time you return home? __**about 66 miles**_____
8. What is the shortest distance from Lost Meadow to Warm Springs? **about 22.5 miles**

Worksheets on Scale Answer Key

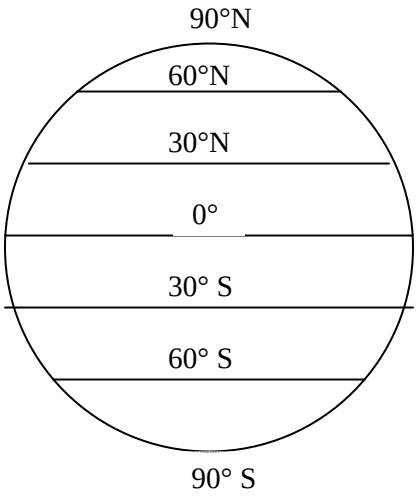
(map from http://freepages.genealogy.rootsweb.com/~monticue/photogallery/photo20308/colorado_map.jpg**)**



Use a ruler and a piece of string to answer the following questions: **(each answer is worth 1 point; 10 total; distances are approximate, make sure students are within about five miles of the answers)**

1. According to the scale, how far is forty miles on the map?___**3/4 of an inch**_____
2. How far is it from Denver to Pueblo?_____**about 80 miles**_____
3. What road would you take from Walsenburg to Durango?____**about 95 miles**_____
4. Is Colorado Springs closer to Denver or Pueblo? __**Pueblo**_____ By how many miles?__**20**_____
5. You live in Burlington and want to visit friends in Denver and Colorado Springs. Plan out the best route you will take there and back. **Take I-70 to Denver, I-25 to Colorado Springs; then Highway 24 back to Burlington.**__
6. Traveling on I-70 and I-76, how many miles is it from Grand Junction to Sterling and back?__**about 665 miles**_
7. Is La Junta closer to Trinidad or Pueblo? _**Pueblo**_____ By how many miles?__**13**_____
8. How far would you have to drive from Craig to the Utah border? _**about 80 miles**_____

Worksheets on Latitude and Longitude

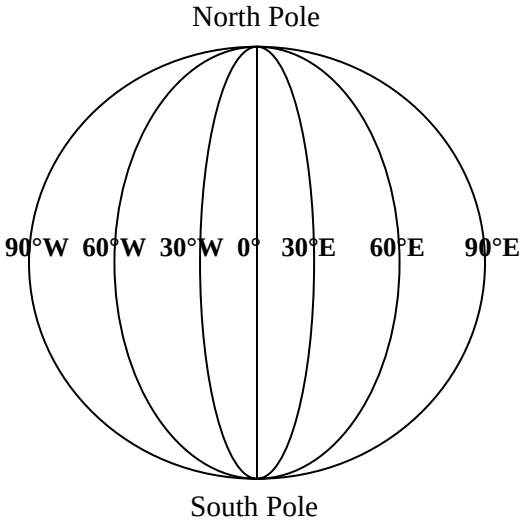


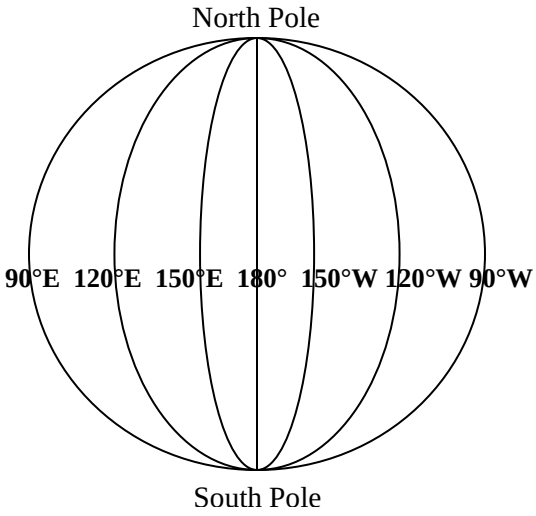
- Label the Equator and trace over it with a RED colored pencil.
- Shade the Northern Hemisphere with a BLUE colored pencil
- Shade the Southern Hemisphere GREEN colored pencil

Answer the following questions:

1. Lines of latitude are _____ to the Equator.
2. There are _____ degrees of latitude north and south of the Equator.
3. Another name for latitude lines is _____.
4. The Equator divides the Earth into _____ equal parts.
5. Lines of latitude run _____ and _____.
6. Lines of latitude above the Equator are which direction? _____
7. Lines of latitude below the Equator are which direction? _____

Worksheets on Latitude and Longitude





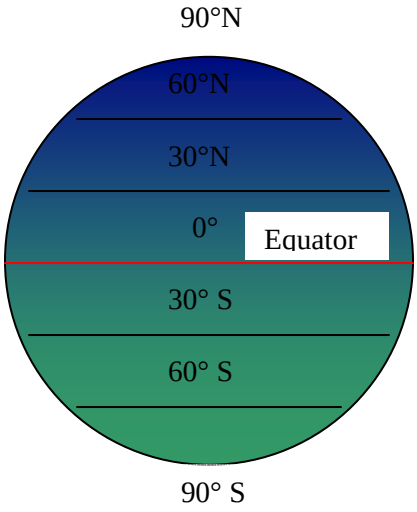
- Label the Prime Meridian and trace over it with a RED colored pencil.
- Label the International Date Line and trace over it with a GREEN colored pencil.
- On both globes, shade the Eastern Hemisphere PINK.
- On both globes, shade the Western Hemisphere BLUE.

Answer the following questions:

1. Lines of longitude are also called _____.
2. Lines of longitude run in which directions? _____ and _____.
3. Degrees to the right of the Prime Meridian are which direction? _____
4. Degrees to the left of the Prime Meridian are which direction? _____
5. Longitude lines are not _____ like latitude lines.
6. All lines of longitude meet at the _____ _____ and _____ _____.

Worksheets on Latitude and Longitude Answer Key

(each question is worth one point each, for a total of 10 points)



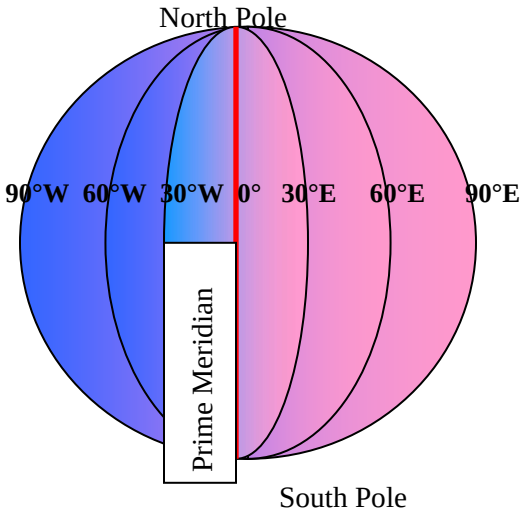
- Label the Equator and trace over it with a RED colored pencil.
- Shade the Northern Hemisphere with a BLUE colored pencil
- Shade the Southern Hemisphere GREEN colored pencil

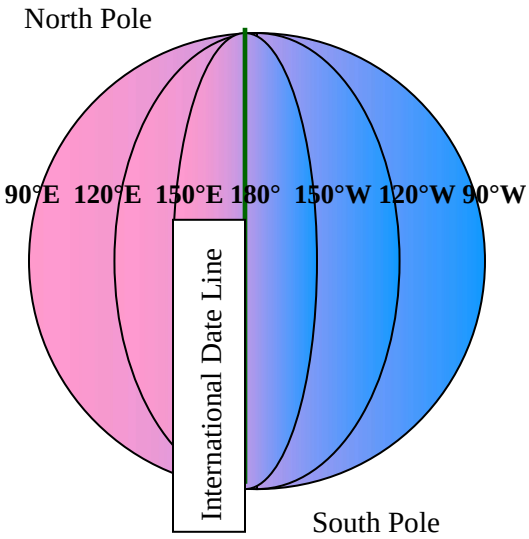
Answer the following questions:

1. Lines of latitude are __**parallel**_____ to the Equator.
2. There are __**90**_____ degrees of latitude north and south of the Equator.
3. Another name for latitude lines is __**parallels**_____.
4. The Equator divides the Earth into ___**two**_____ equal parts.
5. Lines of latitude run _**east**_____ and __**west**_____.
6. Lines of latitude above the Equator are which direction? __**North**_____
7. Lines of latitude below the Equator are which direction? ___**South**_____

Worksheets on Latitude and Longitude Answer Key

(each question is worth one point each, for a total of 10 points)





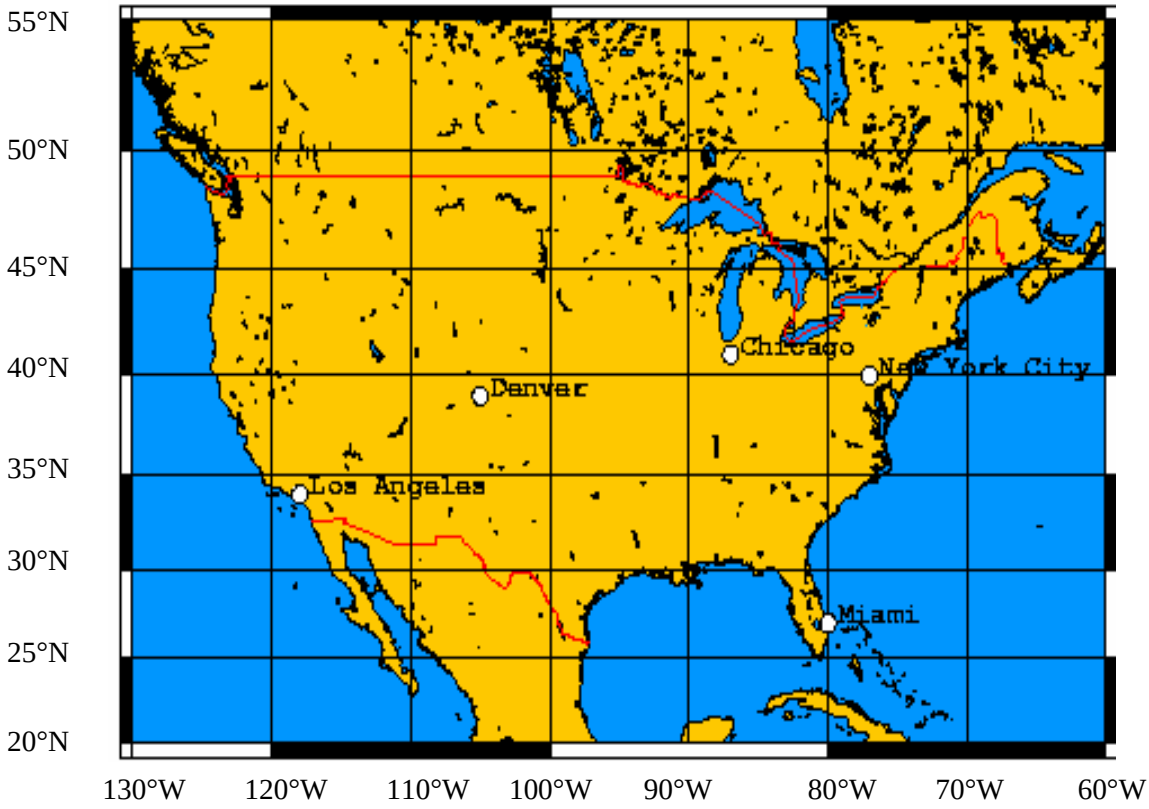
- Label the Prime Meridian and trace over it with a RED colored pencil.
- Label the International Date Line and trace over it with a GREEN colored pencil.
- On both globes, shade the Eastern Hemisphere PINK.
- On both globes, shade the Western Hemisphere BLUE.

Answer the following questions:

7. Lines of longitude are also called ___**meridians**_____.
8. Lines of longitude run in which directions? ___**north**_____ and ___**south**_____.
9. Degrees to the right of the Prime Meridian are which direction? _____**East**_____
10. Degrees to the left of the Prime Meridian are which direction? _____**West**_____
11. Longitude lines are not ___**parallel**_____ like latitude lines.
12. All lines of longitude meet at the _**North**_____ ___**Pole**_____ and _**South**_____ ____**Pole**_____.

Worksheets on Finding Places on a Map

(map made at http://www.aquarius.geomar.de/omc/make_map.html)



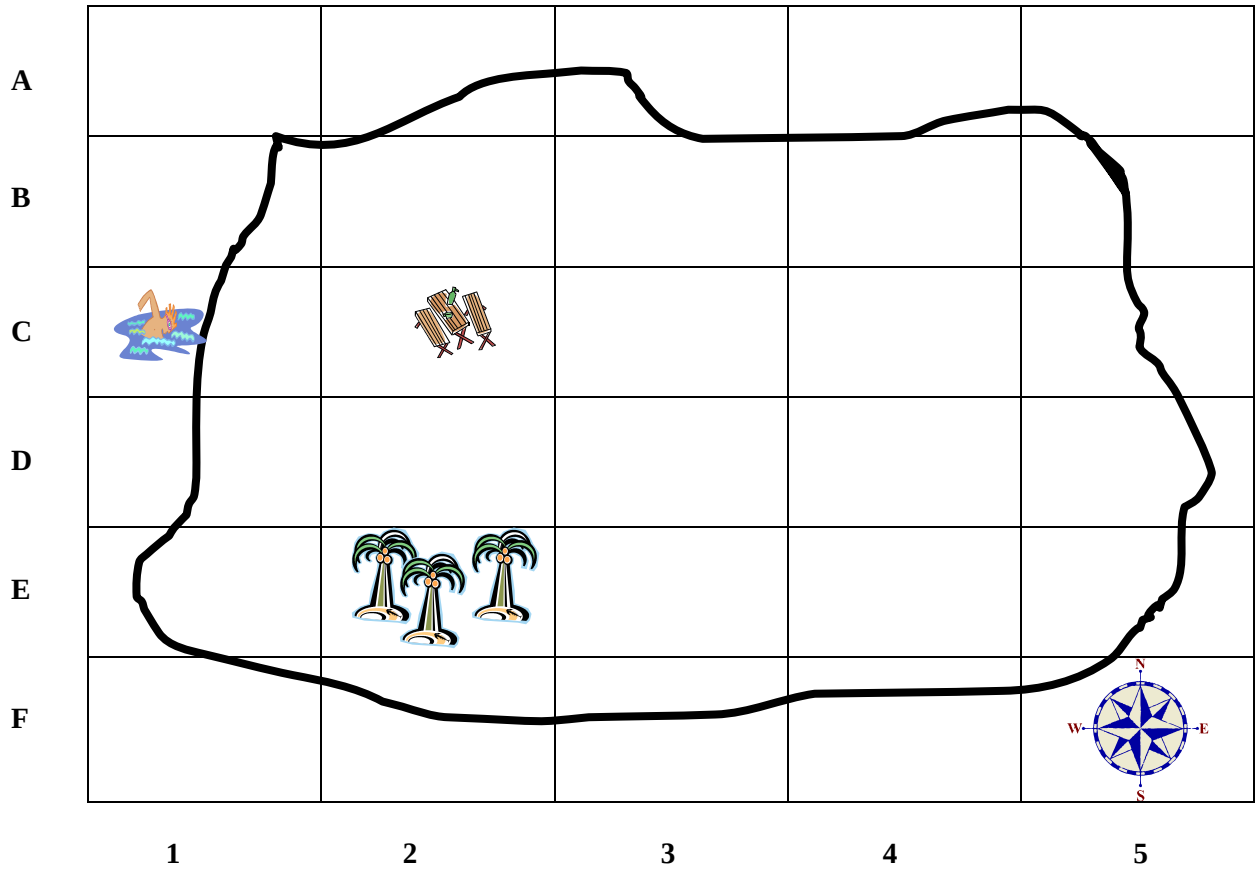
Give the Latitude and Longitude for each of the following cities:

	Latitude	Longitude
Denver	_____	_____
Los Angeles	_____	_____
Miami	_____	_____
Chicago	_____	_____
New York City	_____	_____

Draw a red star at 35°N and 90°W.
Draw a blue triangle 43°N and 105°W.
Draw a green circle at 25°N and 63°W
Draw a purple rectangle at 53°N and 90°W.
Draw a pink square at 22°N and 102°W.

Worksheets on Finding Places on a Map

Pirate's Cove Island



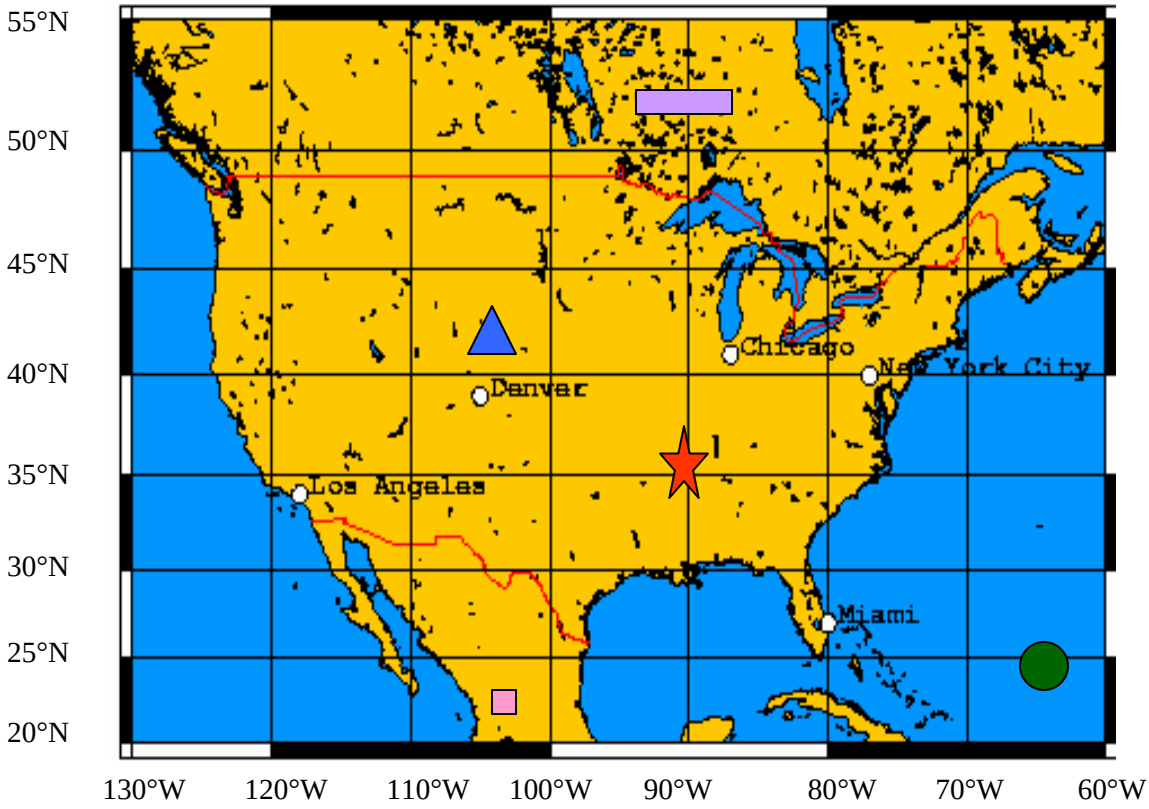
Read the following story and follow the directions it contains.

You and your family sailed to Pirate's Cove Island for the day. You have printed off the above map of the island and its coordinates from the internet and have brought it with you. When you get there, your family decides to explore the island. You tie up the boat in a small cove located at D-1. **Draw a picture of the rowboat tied up in the cove.** You and your family begin to walk around the island. You notice a group of old palm trees. **List the coordinates of these trees _____.** Your mom notices a mountain to the east. After heading over to the eastern most tip of the island, you realize it is actually an old volcano! **Add this volcano to your map.** To the north, you see a huge rock. You and your family head over to explore it. After arriving, you decide to add it to your map. You and your family agree that is looks like it is in section B-5. **Carefully draw in this rock on the map.** After this, you are all hungry. You see a picnic table on the map. You all head over there to eat your lunch. **List the coordinates of your eating area _____.** An hour after lunch, you are all ready to go swimming. You decide to try swimming one section north of where you tied up the boat. **What are the coordinates of your afternoon swim? _____.** After the swim, you head to the middle of the island where you discover an old cave. **You add this to your map after deciding you are in section D-3**. Since your parents are with you and you all have flashlights, you decide to explore a bit of the cave. Once inside you find an old piece of paper. As you look at it, you realize it is an old map and the first clue to buried treasure! It directs you to a hollow tree where another clue awaits you. The hollow tree is marked on the map as being in the section that is directly north and east of you. **Add the hollow tree to your map.** Your dad is the first to spot the tree. Inside you discover a second clue! This one directs you to go two sections south and look for a clump of raspberry bushes. There you will find an old shovel and the final clue to the treasure! You quickly run south to the bushes. Sure enough, your brother finds the shovel and the final clue. **Quickly add the shovel to your map.** It tells you to head northwest to the very tip of the island. Excitedly you set out. You are leading the charge now! Once you get to the location, you begin to dig…and dig…and dig! Finally, your shovel hits something hard. It is a treasure chest and it is filled with gold! Congratulations! **Add the treasure chest to your map!**

Worksheets on Finding Places on a Map Answer Key

(map made at http://www.aquarius.geomar.de/omc/make_map.html)

(each answer is worth one point, for a total of 15 point)



Give the Latitude and Longitude for each of the following cities: **(give credit as long as students are within one or two degrees)**

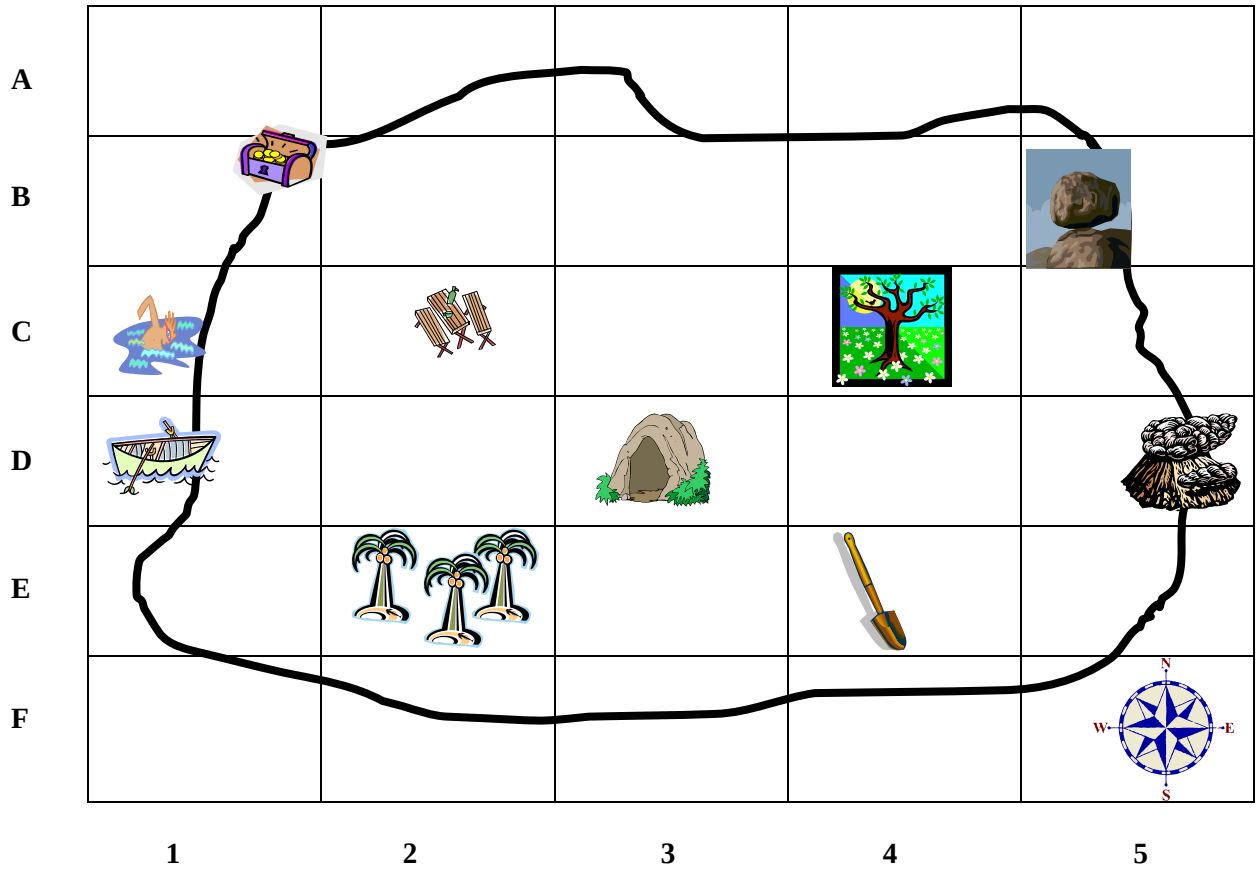
	Latitude	Longitude
Denver	**39°N**	**105°W**
Los Angeles	**34°N**	**118°W**
Miami	**27°N**	**80°W**
Chicago	**41°N**	**87°W**
New York City	**40°W**	**77°W**

Draw a red star at 35°N and 90°W.
Draw a blue triangle 43°N and 105°W.
Draw a green circle at 25°N and 63°W
Draw a purple rectangle at 53°N and 90°W.
Draw a pink square at 22°N and 102°W.

Worksheets on Finding Places on a Map Answer Key

(this page is worth a total of ten points)

Pirate's Cove Island



Read the following story and follow the directions it contains.

You and your family sailed to Pirate's Cove Island for the day. You have printed off the above map of the island and its coordinates from the internet and have brought it with you. When you get there, your family decides to explore the island. You tie up the boat in a small cove located at D-1. **Draw a picture of the rowboat tied up in the cove. (see map)** You and your family begin to walk around the island. You notice a group of old palm trees. **List the coordinates of these trees __E-2__.** Your mom notices a mountain to the east. After heading over to the eastern most tip of the island, you realize it is actually an old volcano! **Add this volcano to your map. (see map)** To the north, you see a huge rock. You and your family head over to explore it. After arriving, you decide to add it to your map. You and your family agree that is looks like it is in section B-5. **Carefully draw in this rock on the map. (see map)** After this, you are all hungry. You see a picnic table on the map. You all head over there to eat your lunch. **List the coordinates of your eating area __C-2__.** An hour after lunch, you are all ready to go swimming. You decide to try swimming one section north of where you tied up the boat. **What are the coordinates of your afternoon swim? __C-1___.** After the swim, you head to the middle of the island where you discover an old cave. **You add this to your map after deciding you are in section D-3. (see map)** Since your parents are with you and you all have flashlights, you decide to explore a bit of the cave. Once inside you find an old piece of paper. As you look at it, you realize it is an old map and the first clue to buried treasure! It directs you to a hollow tree where another clue awaits you. The hollow tree is marked on the map as being in the section that is directly north and east of you. **Add the hollow tree to your map. (see map)** Your dad is the first to spot the tree. Inside you discover a second clue! This one directs you to go two sections south and look for a clump of raspberry bushes. There you will find an old shovel and the final clue to the treasure! You quickly run south to the bushes. Sure enough, your brother finds the shovel and the final clue. **Quickly add the shovel to your map. (see map)** It tells you to head northwest to the very tip of the island. Excitedly you set out. You are leading the charge now! Once you get to the location, you begin to dig…and dig…and dig! Finally, your shovel hits something hard. It is a treasure chest and it is filled with gold! Congratulations! **Add the treasure chest to your map! (see map)**

Worksheets on Physical Maps

(map from http://www.colorado-mapsite.com/us_co__us.html)

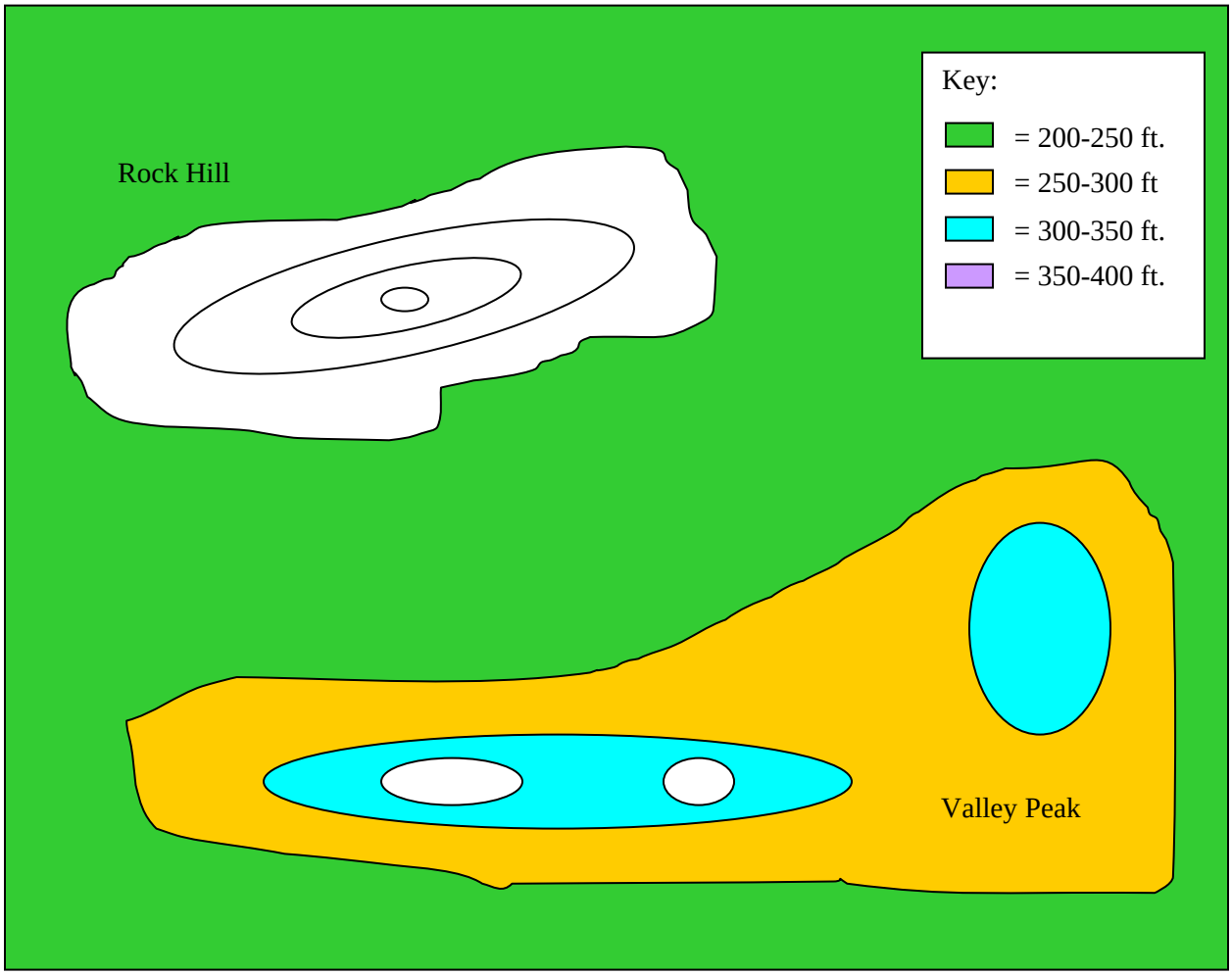
Use the physical map of Colorado to answer the following questions:

1. In what half of the state are most of the mountains located? _____
2. What color represents the highest elevation? _____

   How do you know this?_____
3. Which city is at a higher elevation, Telluride or Alamosa? _____
4. What color represents the Great Plains of Colorado? _____

Worksheets on Physical Maps

Valley Park



Use the physical map above to complete the following questions and activities:

1. What is the elevation of the majority of Valley Park?_____
2. What color represents the highest elevation? _____
3. Turquoise represents what elevation?_____
4. The two highest points on Valley Peak have an elevation of 375 feet. Shade them in appropriately.
5. The very top of Rock Hill is 405 feet. Choose a new color to represent this elevation. Shade in appropriately and add to the map key.
6. The next highest section of Rock Hill is 390 feet. Shade this in appropriately.
7. The last two sections of Rock Hill are 320 ft. and 275 feet. Shade in these sections with the correct colors.
8. Where would be the best place to go to a "birds eye" view of the park? _____

Appendix K page 1

Worksheets on Physical Maps Answer Key

(map from http://www.colorado-mapsite.com/us_co__us.html)

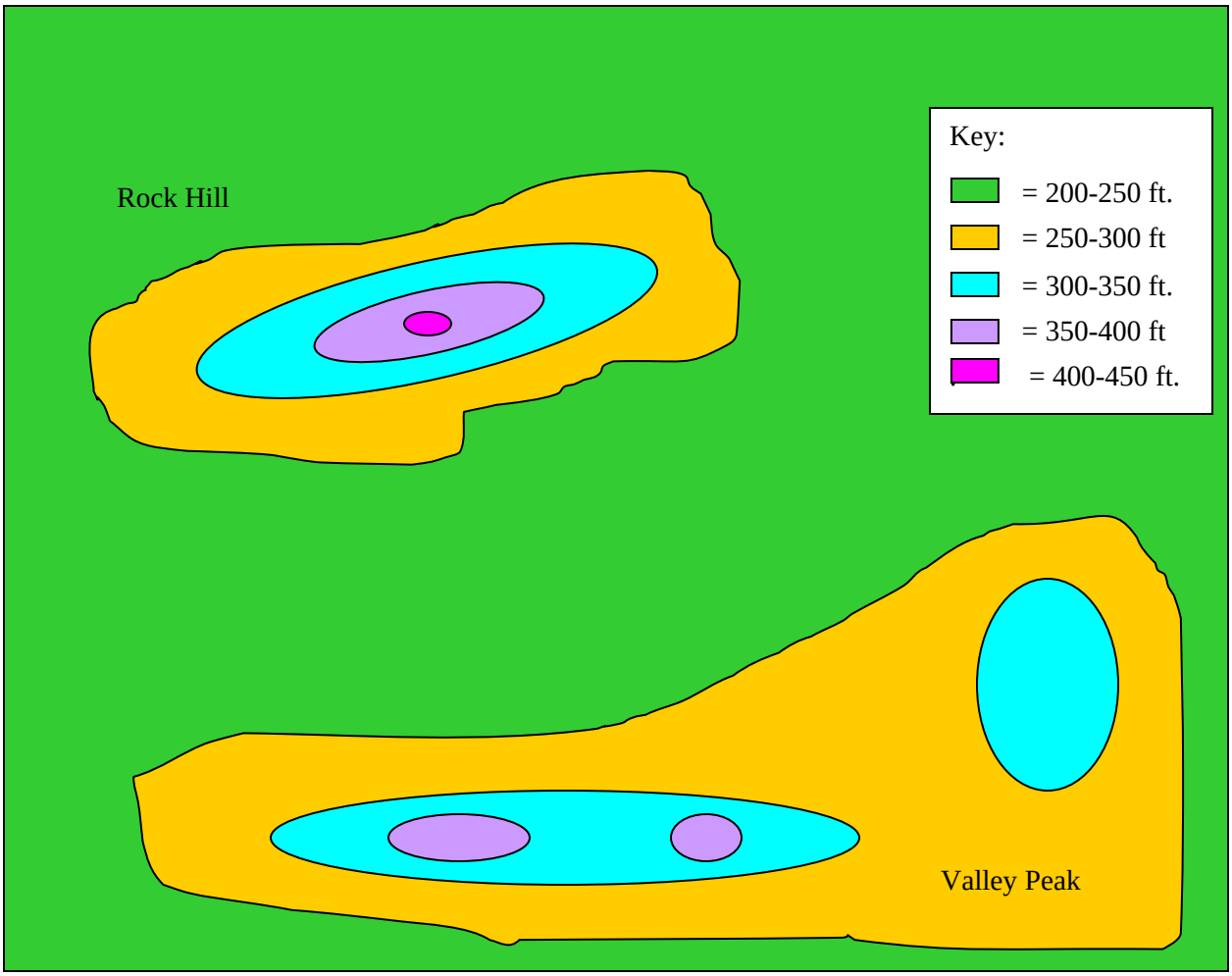
Use the physical map of Colorado to answer the following questions: **(worth one point each for a total of five points)**

1. In what half of the state are most of the mountains located? _**the West**_____
2. What color represents the highest elevation? _**White**_____

   How do you know this? __**It is that color on the tops of the mountains**__
3. Which city is at a higher elevation, Telluride or Alamosa? ___**Telluride**_____
4. What color represents the Great Plains of Colorado? ___**Light green**_____

Worksheets on Physical Maps Answer Key

Valley Park



Use the physical map above to complete the following questions and activities: **(one point per correct answer; ten points total)**

1. What is the elevation of the majority of Valley Park?__**200-250 feet**_____
2. What color represents the highest elevation? ___**purple**_____
3. Turquoise represents what elevation?___**300-350 feet**_____
4. The two highest points on Valley Peak have an elevation of 375 feet. Shade them in appropriately. **(see map)**
5. The very top of Rock Hill is 405 feet. Choose a new color to represent this elevation. Shade in appropriately and add to the map key. **(can be any new color)**
6. The next highest section of Rock Hill is 390 feet. Shade this in appropriately. **(see map)**
7. The last two sections of Rock Hill are 320 ft. and 275 feet. Shade in these sections with the correct colors. **(see map)**
8. Where would be the best place to go to a "bird's eye" view of the park? __**top of Rock's Hill**_

Appendix L

Study Guide

Study Guide – all the answers can be found in your Geography copybook!

Know the definitions of the following words:

- Atlas
- Compass Rose
- Coordinates
- Elevation
- International Date Line
- Map Key
- Minutes
- Physical Map

Study and know the following worksheets:

- Scale
- Latitude and Longitude
- Finding Places on a Map (using latitude and longitude)
- Physical Maps (especially the Valley Park sheet)
- Know the approximate location of the United States by latitude and longitude (see Finding Place on a Map sheet)

Be prepared to put to use all the skills you have learned as a mapmaker during this unit!!!

Appendix M, page 1

Test

Name_____

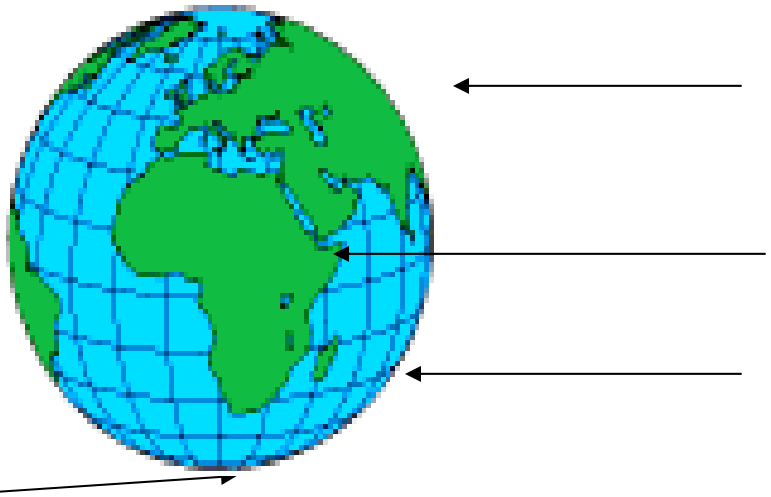
Matching: Match the following terms to the correct definition:

_____ International Date Line	a.	a book of maps
_____ Coordinates	b.	the table or chart that helps you to decode a map; usually found in one of the corners of the map
_____ Compass rose	c.	an imaginary line that marks a place on Earth where each new day begins
_____ Atlas	d.	the height of something; on maps it is shown as the number of feet above or below sea level
_____ Map key	e.	a symbol on a map that shows directions north, south, east, and west
_____ Elevation	f.	a type of map that shows hills, mountains, valleys, and other features of the land.
_____ Minutes	g.	sets of numbers that help identify a specific place on a globe or map
_____ Physical Map	h.	units of space used to measure distance between lines of latitude and longitude

Labeling: Label the parts of the globe by writing the correct terms in the blank lines:

North Pole
South Pole
Equator
Northern Hemisphere
Southern Hemisphere

Trace over the line of latitude in RED and the lines of longitude in PURPLE.



Test

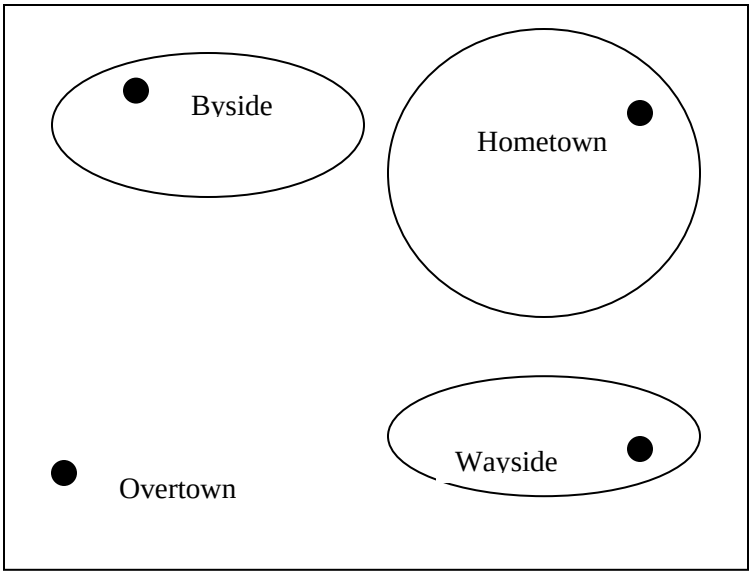
Map work:

Using a ruler and this map of the imaginary state of Bliss, create a map scale to show that
1 inch = 10 miles
Find the distances between:

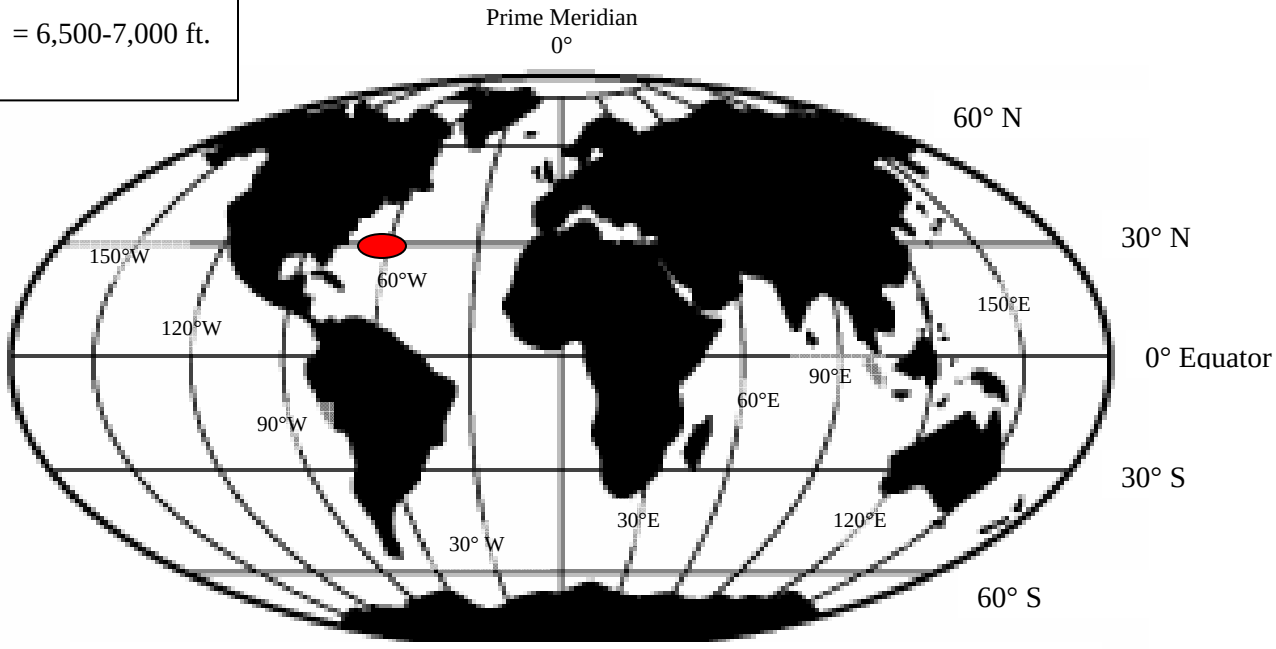
Hometown and Byside _____

Wayside and Overtown _____

Finish the map key to show the following elevations, using the clues below. Then shade in the map correctly.
Byside is the highest city.
Hometown is higher than Wayside
Overtown is the lowest city; its elevation is the same as the majority of the state



Key
- = 5,000-5,500 ft.
- = 5,500-6,000 ft.
- = 6,000-6,500 ft.
- = 6,500-7,000 ft.



Use the above map to answer the following questions:
Give the coordinates of the red oval _____
Put a blue star at 60°S and 120°E.
Put a purple square at 15°S and 150°W.
What country is between 60°W and 120°W and 30°N and 45°N?_____

Test Answer Key

(30 points total)

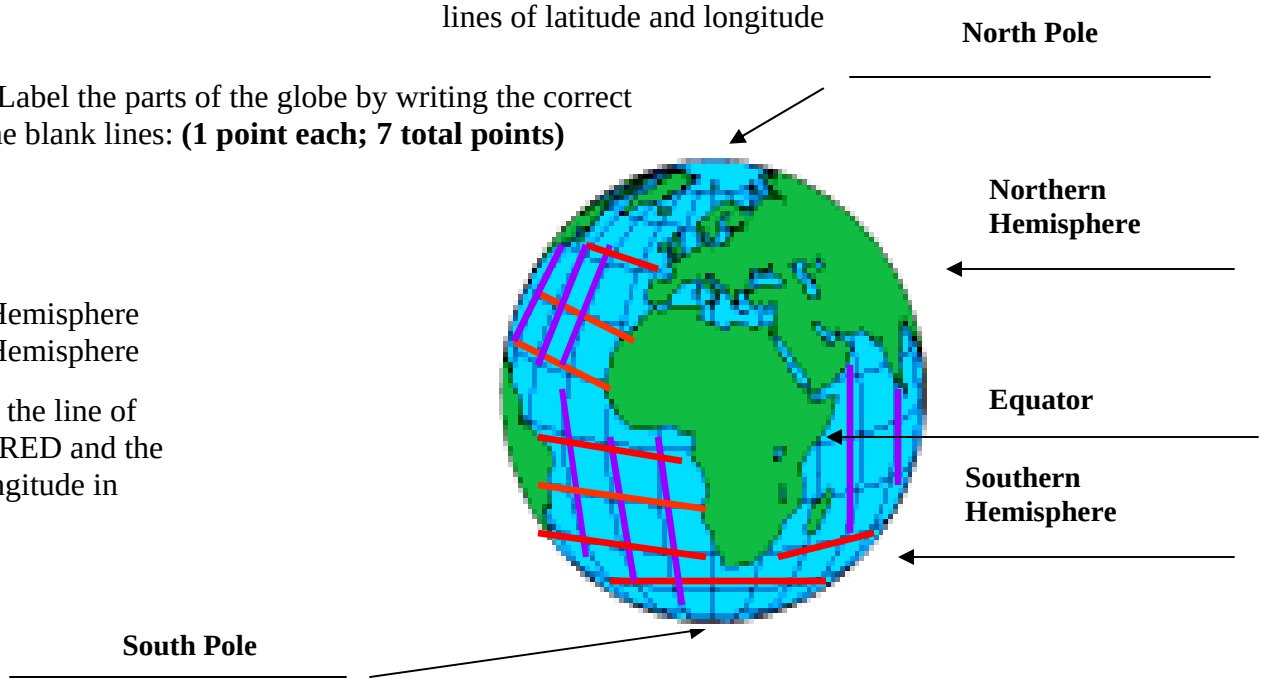
Matching: Match the following terms to the correct definition: **(1 point each; 8 total points)**

__C__ International Date Line	a.	a book of maps
__G__ Coordinates	b.	the table or chart that helps you to decode a map; usually found in one of the corners of the map
__E__ Compass rose	c.	an imaginary line that marks a place on Earth where each new day begins
__A__ Atlas	d.	the height of something; on maps it is shown as the number of feet above or below sea level
__B__ Map key	e.	a symbol on a map that shows directions north, south, east, and west
__D__ Elevation	f.	a type of map that shows hills, mountains, valleys, and other features of the land.
__G__ Minutes	g.	sets of numbers that help identify a specific place on a globe or map
__F__ Physical Map	h.	units of space used to measure distance between lines of latitude and longitude

Labeling: Label the parts of the globe by writing the correct terms in the blank lines: **(1 point each; 7 total points)**

North Pole
South Pole
Equator
Northern Hemisphere
Southern Hemisphere

Trace over the line of latitude in RED and the lines of longitude in PURPLE.



Test Answer Key

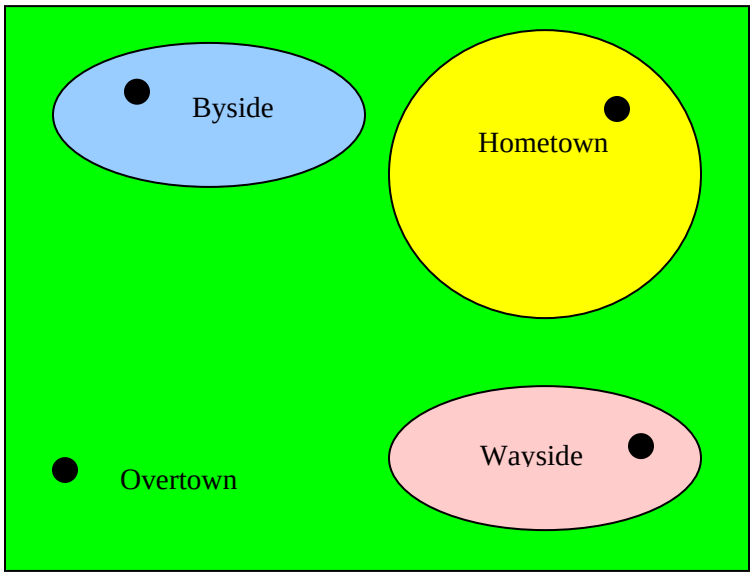
Map work: **(1 point each; for a total of 11 points)**
Using a ruler and this map of the imaginary state of Bliss, create a map scale to show that 1 inch = 10 miles
Find the distances between:

=10 miles

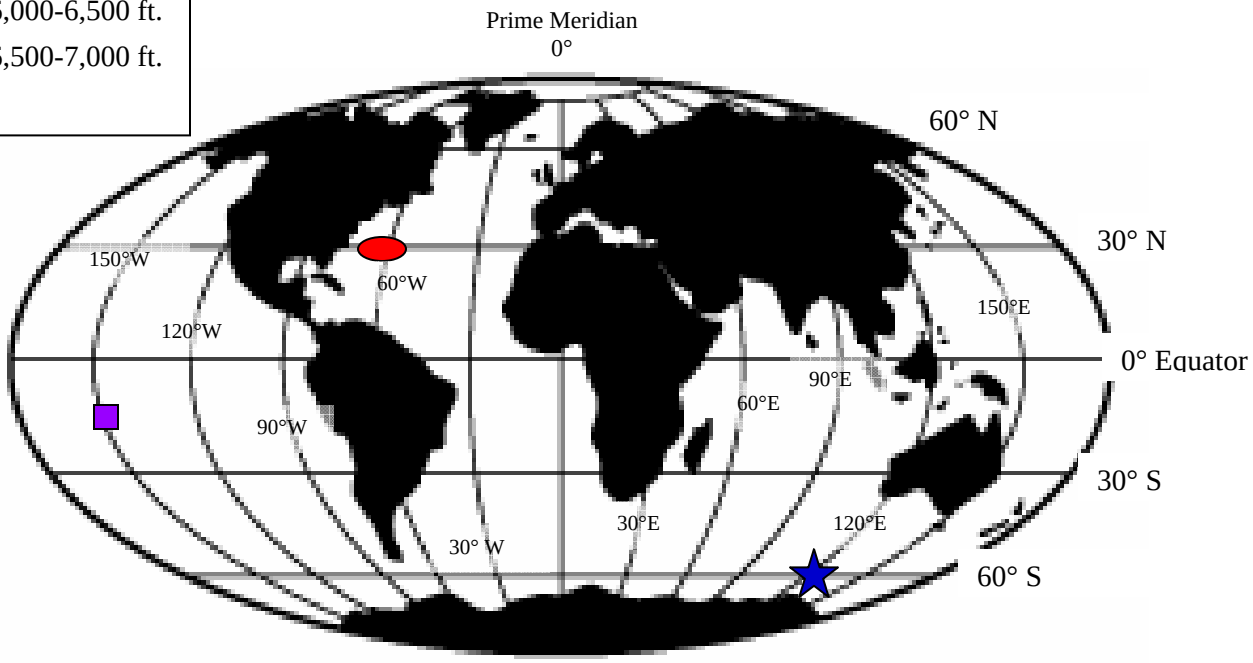
Hometown and Byside __**25 miles**__

Wayside and Overtown __**30 miles**__

Finish the map key to show the following elevations, using the clues below. Then shade in the map correctly.
Byside is the highest city.
Hometown is higher than Wayside
Overtown is the lowest city; its elevation is the same as the majority of the state
(any colors may be used as long as the key matches the map)



Key
= 5,000-5,500 ft.
= 5,500-6,000 ft.
= 6,000-6,500 ft.
= 6,500-7,000 ft.



Use the above map to answer the following questions: **(1 point each; 4 points total)**
Give the coordinates of the red oval __**30° N, 60°W**__
Put a blue star at 60°S and 120°E. **(see map)**
Put a purple square at 15°S and 150°W. **(see map)**
What country is between 60°W and 120°W and 30°N and 45°N? **The United States**

Appendix O

Culminating Activity Directions

I understand this project.

Student signature_____

Parent signature_____

GEOGRAPHY PROJECT

BE A MAPMAKER!

Our geography project for this quarter is going to be great fun! The students will be making a map of their neighborhood and their route to school. To develop student's visual skills, take a walk through your neighborhood with your child, encouraging them to take notes of important streets and landmarks. They also should take notes on their way to and from school. Student's maps should represent proportions and distances as closely as possible.

Included in their map should be the following elements:

- ⇒ Their house
- ⇒ School
- ⇒ At least five other important landmarks, marked with invented symbols (such as restaurants, parks, churches, banks, friends' homes, etc.)
- ⇒ Map key to explain symbols
- ⇒ Map scale
- ⇒ Compass rose with all directions listed
- ⇒ Map coordinates (these can either be latitude and longitude lines or number and letter coordinates)

The map should be presented on a half-sheet of poster board. It should be detailed and neat with lots of color! There should not be any errors in spelling. Have fun!