

Topographic Map Basics

Geology

Mr. Traeger

Name: _____ Period: _____ Date: _____
 Partner's Name: _____

Purpose

The purpose of this activity is to become acquainted with the basic concepts of topographic maps.

Materials

- pencil
- Pasadena Topographic Map
- Metric Ruler
- Key to Topographic Map Symbols (page 697 in your textbook)
- Chapter 3 in your textbook.

Part A: Introduction to Topographic Maps

Use the Pasadena Topographic Map to answer the following.

| 1. Find your house on the map. What is the approximate latitude and longitude of your house? | What is the elevation of your house in feet? | | | | | | | | | | | | | | | | | | |
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| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds | | | | | | | | | | | | | | |
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| 2. Find La Cañada High School on the map. What is the approximate latitude and longitude of the school? | What is the elevation of the school in feet? | | | | | | | | | | | | | | | | | | |
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| 3. What is topography? | I want to fly my airplane over La Cañada and wave hello to you. Tell me the elevation of the highest topography in feet so that I don't crash my plane? |
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|-------------------------------------|--------------------------------|----------------------------------------------------------------------------|----------------|
| 4. What is the definition of scale? | What is the scale on this map? | What is bigger? The scale on this map or the scale on the classroom globe? | |
| | | Scale on Map | Scale on Globe |
| | | Which one is <u>mathematically</u> bigger? | |

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| 5. What are all the wiggly brown lines on the map? | If the brown lines are close together, what does this mean? | If the brown lines are far apart, what does this mean? |
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| 6. What are the blue lines or circles on the map? | What is the name of the largest blue line on the map? |
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| 7. What is the contour interval for this map? | What does contour interval mean? |
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| 8. In what direction does the 210 freeway run? | In what direction does the 134 freeway run? | In what direction does the 2 freeway run? |
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| 9. What <i>type</i> of highway is the 210? | What <i>type</i> of highway is the 134? | What <i>type</i> of highway is the 2? |
| | | |

10. What does the green shading on the map indicate?

11. What is the length of Foothill Blvd. from the corner of Oak Grove near the High School to the end of the map in La Crescenta? State your answer in miles and kilometers.

12. What is the average slope (change in y/change in x) in feet per mile from the Jet Propulsion Laboratory to the Rose Bowl? Show your work!

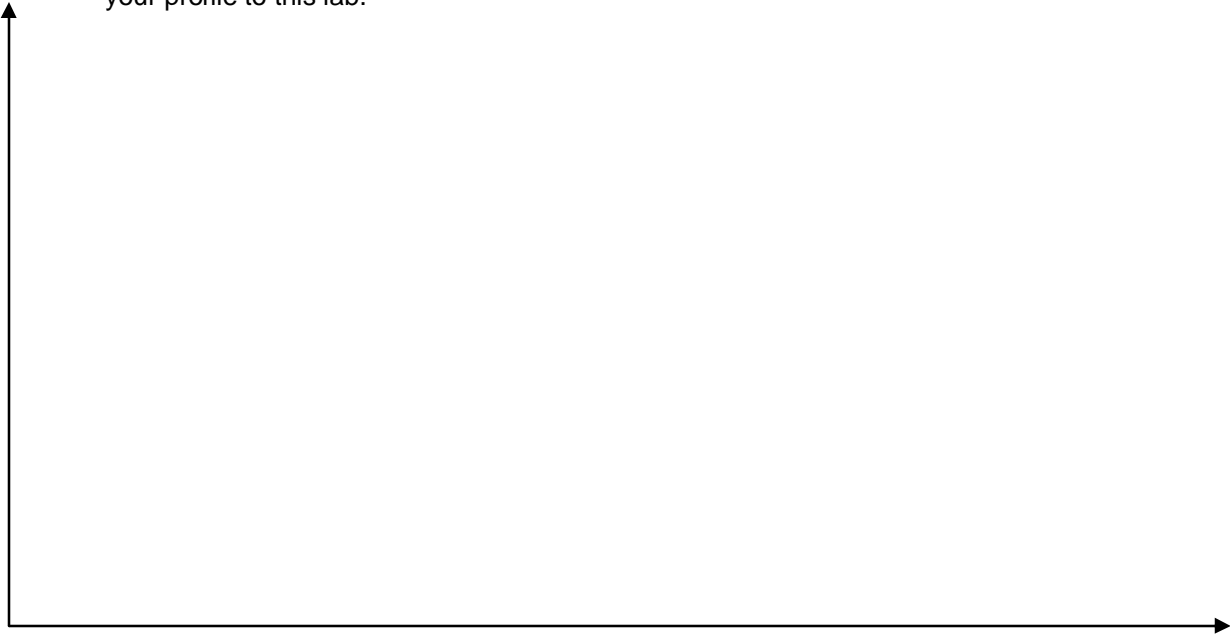
13. What is the average slope from Gould Mesa Campground to the Jet Propulsion Laboratory in feet per mile? Show your work!

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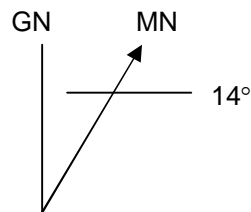
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14. Find Rosemont Ave. in La Crescenta. Draw a vertical profile along Rosemont Ave. from Rockdell St. to La Crescenta Ave. How does the slope change from the top of the hill to the bottom of the hill? Calculate the average slope in feet per mile. **Attach** the sheet of paper you used to draw your profile to this lab.



Part B: Map and Compass Skills

1. What is a compass and how does it work?
2. What does this symbol on the map mean? What is the difference between true and magnetic north?



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3. **Why** is there a difference between True North and Magnetic North? What's happening inside the planet?
4. How would you use a compass to orient your map to True North? Do it.
5. What point in the classroom is True North? What point in the classroom is Magnetic North? Name the features in the room where these points are.
6. How would you use a map and compass to find yourself if you are lost in the forest?

Bonus Question

You walk 30 Km due north, 30 Km due east, and 30 Km due south. You find that you arrive at the same place where you started from. Where are you? (1° of latitude = 111 Km = 69 miles)