Science
eLearning
Ms. Hammond

Name_____
Date_____

In the event that ACAS is closed due to inclement weather, students are expected to complete the assignments listed below. Should students have questions regarding these assignments, they may contact me by e-mail (maryellenhammond@acalt.org) between 9:30 a.m-11:00 a.m. and 1:00 p.m.-2:30 p.m. to receive assistance. These assignments are due within two days of our return to school. **Failure to turn in all work within two days of returning to school will result in a zero for each day, and no seat hour will be awarded for the day(s) missed.**

Students should complete the attached worksheets.

NAME _____ DATE Physical Science Day 1 CLASS _____

The Nature of Science

USING ANALOGIES TO DEVELOP THINKING SKILLS

What is an analogy? An analogy is used to express a relationship between two things. You can use an analogy to help you explain something by comparing it with something related and familiar. For example, a dress **pattern** is used by a **seamstress** who makes clothes in much the same way that a **blueprint** of a house is used by a **builder** who makes buildings. There is a special way to write these words to express their relationship and form a word analogy.

We can rewrite the word analogy in the following way:

seamstress : pattern :: builder : blueprint

This is read as "seamstress is to pattern as builder is to blueprint."

To solve analogies, you can first analyze the given pair to infer an appropriate relationship between the two terms. You then look at the third term in light of the inferred relationship to choose an appropriate fourth term to complete the second pair of terms.

There are many ways to compare and analyze the given pair of terms in an analogy. Here are types of analogies. Maybe you can think of others.

Synonyms Do the words mean the same?	**Example:** sufficient : enough :: scarce : few
Antonyms Do the words mean the opposite?	**Example:** idiot : genius :: valley : mountain
Part to Whole Is one term part of the other?	**Example:** bead : necklace :: link : chain
Part to Part Are both terms part of the same thing?	**Example:** hand : elbow :: foot : knee
Purpose or Use Is one term used with or by the other?	**Example:** glove : ball :: hook : fish
Description Does one term describe the other?	**Example:** loud : thunder :: large : whale

Complete the following analogies by choosing a word from those listed below the blank that appropriately completes the second pair. Then decide which type each analogy is.

Example: fabric : shirt :: yarn : <u>sweater</u> part to whole
(shoe, sweater, chair, needle)

1. question : answer :: hypothesis : _____ _____
(experiment, data, conclusion, procedure)

2. detective : clues :: scientist : _____ _____
(chemicals, books, experiments, data)

3. diamond : clear :: coal : _____ _____
(carbon, black, element, burn)

4. heat : energy :: wood : _____ _____
(oxygen, property, matter, compound)

5. oil : coal :: rain : _____ _____
(acid, snow, gasoline, ozone)

6. hypothesis : question :: conclusion : _____ _____
(problem, answer, guess, theory)

7. different : similar :: variable : _____ _____
(independent, dependent, constant, control)

NAME _____ DATE _____ CLASS Physical Science Day 2

GEOGRAPHY CONNECTION Chapter 3

Moving Objects

READING MAPS

When you are planning a trip, it is helpful to use a map to find your route. Usually, the road you have to take is not very straight. How can you use physics to help you plan your trip? What can a map tell you about the area through which you will travel?

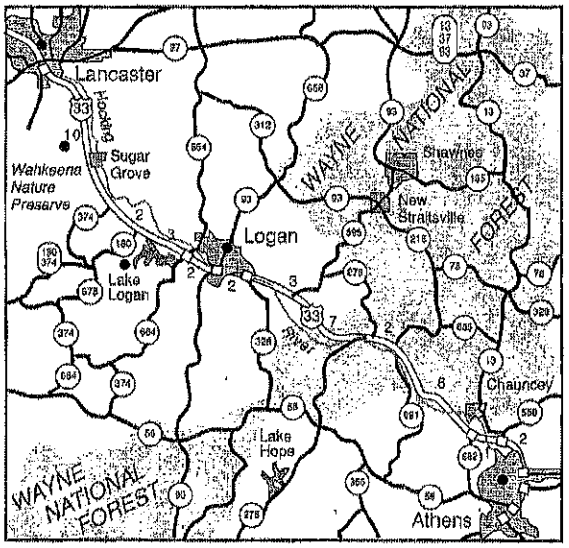
In this activity, you will use a map to find the difference between speed and velocity and the difference between distance traveled and displacement. Displacement is the net change in position. Displacement is a vector. It includes both magnitude and direction.

Materials

- road atlas
- tracing paper
- metric ruler
- highlighter

Procedure

1. Find an area that is of interest to you on your map or road atlas. Choose a location that has a fairly curvy road. Trace this area or make a photocopy of it. Highlight the road you have chosen.



2. What is the distance along your route? Look along the road on your map. You may see small red or black numbers along the route. These numbers give you distance measurements. Use your map key to find out how they are used. Add these numbers to find the distance you will travel. When finding distance, you do not need to know direction, since distance is a scalar. A scalar measures magnitude only.

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_____

3. What is the displacement for the route you chose? Use the map scale to measure the straight line distance (the displacement) of your route. Since displacement is a vector, you must record both magnitude and direction. _____

_____

_____

4. Using the definitions speed = distance/time and velocity = displacement/time, describe how speed differs from velocity.

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_____

5. Suppose you took a round trip of your route and ended up in the same place you started. What would be your distance and your displacement for the round trip?

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_____

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