

## The Language of Math and Science

- Objectives:** To help students determine what types of questions are asked in English, math and science classes.  
To help students become familiar with type of language used in math and science classes.  
To help students become familiar with cognitive academic language.

**Materials:** Prompts for oral language development, math and science.

**Preparation:** Cut apart one set of oral language development, math and science prompts for each group of 3-5 students. Be sure to cut off the words, oral language development, math and science.

### Activity:

1. Each student should have made his or her own treasure chest box. They should have responded to some of the social studies and oral language development prompts. This will help them feel comfortable with the types of prompts that are used with the boxes.
2. Cut apart the conversation, math and science prompts found below. Create one set of the prompts for each group of students.
3. Divide students into small groups. There should be three to five students in each group.
4. Introduce the math and science book glossaries to students. Have students practice looking up words such as volume in the glossaries.
5. Ask students to divide the prompts into three piles. One pile should be the types of questions that their ESL teacher would ask. The second pile would be the types of questions that their math teacher would ask and the third pile would be the types of questions that their science teacher would ask. Students may want to underline hard words, such as angle, and look them up in the glossaries found in Math and Science books.
6. Go over the “answers” with students. Ask them to underline the cue words that helped them figure out where the question belongs.

### Extension Activities:

**Core Curriculum Connection-** The ESL teacher may want to correlate the math and science treasure chest activities with students’ math and science core lessons.

**Math Operations-** The ESL teacher may want students to determine what operation is to be performed for each math problem such as multiplication, addition, etc. Not all math problems listed require students to do a math operation.

Note- Prompt is a good word for English as a Second Language students to use since they will have to take exams.

### Conversation Prompts-

Which item is the biggest? Describe it.	Which item is the smallest? Describe it.	Which item is the biggest? Which item is the smallest? Compare the two.	Which item is the most colorful? Describe it.	Which item is the softest? Describe it?
Which item on your box has a pleasant odor? Describe the item and the odor.	Which item on your box would be the most popular among your classmates? Why do you think so?	Which item on your box will last the longest amount of time? How long will it last? Why do you think so?	List ten pictures of items which are found outside. Describe each picture. Compare and contrast them.	List ten pictures of items which are found inside. Describe each picture. Compare and contrast them.
Which item on your box has a pleasant taste? Describe the item and the taste.	Which item is the prettiest? Describe the object and why you think it is pretty.	Which item on your box would you like to see come alive? Why?	Which item is the coldest? Describe the object and how to make it warm.	Which item is the hottest? Describe the object and how to make it cold.
Which item on your box would be the easiest to lose or misplace? Why?	If you were to give your box to someone special, who would you give it to? Why?	What was the best source of pictures for your box?	Write a list of instructions for creating a treasure chest/culture capsule.	What would you like to store in your box? Make a list of 10 or 12 items.

### Math Prompts-

What is the perimeter of the lid of your box?	Find a picture of something that does not have volume.	What is the volume of your box? How can you figure out the volume?	How many items are on the lid of your box? If you took away three items from the lid, how many would you have left?	Find something circular on your box? What is the diameter of the circle?
What is the area of your box? How would you figure out the area of your box?	Find a picture of something on your box that costs less than a dollar. Write down the price. How much would it cost if you bought ten of those items?	Find a picture of something on your box that costs more than a dollar. Write down the price? How much would cost if you bought ten of those items?	Find a picture of something on your box that moves. How fast does it move? For example, 1 mile an hour. How long would it take to travel 100 miles.	What is the length, height and width of your box? What would the length, height and width of your box if it were two inches longer, and two inches taller?
What is the length, height and width of the lid of your box? Give the measurements in inches and centimeters.	How much do you think your box weighs? How much would weigh if you put something in the box that weighed half a pound?	Look for the most complicated picture on your box? How long do you think it would take to download the picture if the modem speed was 56 K. How long if it were 28.8?	Find a picture of something on your box that is less than half its actual size? If that item were ten times bigger that is now, how big would it be? What would the length, height and width be?	What are the angles of the corners of your box on the inside?
Find a picture of the oldest person on your box? How old do you think he or she is? Find a picture of the youngest person on your box? How old do you think he or she is? How much older is the oldest person than the youngest person?	Look at a picture of a person on your box? How much sleep do you think that they get every night? How much sleep do you think they get in two weeks?	What are the angles of the corners of your box on the outside?	How much do you think that your box is worth? How much would they have to pay if they were to give you the price you wanted plus ten percent tax?	Think about how long it took you to cut out and paste all of the pictures on your box? Add up the number of minutes? How long would it have taken if you had done it twice as fast?

**Science Prompts-**

Find a picture of something on your box that is not flammable. What is it?	Find a picture of something on your box that is flammable. What is it?	Find a picture of something on your box that is not considered to be a mineral. What is it?	Find a picture of something on your box that is considered to be a mineral? What is it?	Find a picture of something on your box that is liquid. What is it? Can it also be a gas?
Find a picture of something on your box that is a gas? What is it? Can it also be solid?	Find a picture of something on your box that is	What is your box made of? Is the cardboard from recycled paper? How can you tell?	What type of adhesive did you use to stick the items on your box? Was it a natural item or man made?	Find a picture of something on your box that is edible? How many calories does it have? Besides reading a chart, how can you measure calories in food items?
Find a picture of a plant or tree on your box. How old do you think it is? How could you find out for sure?	Find a picture of a plant or tree on your box. What does it need to survive? What type of climate? Where can you get the information?	Find a picture of a plant or tree on your box. What diseases can it get? Where can you get the information?	Find a picture of an animal on your box. How old is it? Where can you get the information?	Find a picture of an animal on your box? What does it need to survive? Where can you get the information?
Find a picture of an animal on your box? What diseases can it get?	Find a picture of a food item on your box? What could you use to heat the food item without burning it?	Find a picture on your box of something that could hurt the environment? Think about ways that people hurt the environment by littering.	Find a picture on your box of something that can be recycled. Explain how it can be recycled.	Find a picture on your box of something that cannot be recycled. Explain why it cannot be recycled.

**The following picture is a scene of the activity.**

