Name_____

Chapter 9 Surface Area and Volume

Dear Family,

Does your family have an aquarium? Aquatic creatures make beautiful and interesting pets, and allergies are rarely an issue.

Fish can live in simple aquariums or more complex ones. The type of aquarium you choose will determine the supplies you will need, but all aquariums need a clean base of gravel. The gravel provides a place for beneficial microorganisms to grow. These organisms will help keep your aquarium clean and your animals and plants healthy. Plants help provide oxygen in the water and use some of the animal waste to keep the aquarium cleaner. You will also need clean water that is free of chlorine.

To set up your aquarium, ask your student to help make a plan. Here are some things you need to consider.

- Multiply the area of the base of your tank by the height to find the volume of the tank. This will give you an estimate of how much de-chlorinated water you need to have on hand. Tank sizes are often calculated in terms of gallons—work with your student to convert the volume of water to gallons.

- Find the amount of gravel you need by multiplying the height of the gravel in the tank by the area of the base of the aquarium. Make sure your gravel is rinsed and free of chemicals before putting it in the aquarium.

- Use the volume of water in the tank and the surface area of the tank to find out how many plants and animals your aquarium can safely hold. Local hobbyists and aquarium shops can help you figure out how to stock your aquarium.

You will need to change the water in your aquarium regularly (about a third of the volume every week or so). How much de-chlorinated water will you need to have on hand? Depending on the animals and plants you choose, you may also have to use a filter system and a heater.

In no time at all you'll be enjoying your new pets!

Surface Area and Volume (continued)

Lesson	Learning Target	Success Criteria
9.1 Surface Areas of Prisms	Find the surface area of a prism.	• I can use a formula to find the surface area of a prism. • I can find the lateral surface area of a prism.
9.2 Surface Areas of Cylinders	Find the surface area of a cylinder.	• I can use a formula to find the surface area of a cylinder. • I can find the lateral surface area of a cylinder.
9.3 Volumes of Prisms	Find the volume of a prism.	• I can use a formula to find the volume of a prism. • I can use the formula for the volume of a prism to find a missing dimension.
9.4 Volumes of Cylinders	Find the volume of a cylinder.	• I can use a formula to find the volume of a cylinder. • I can use the formula for the volume of a cylinder to find a missing dimension.
9.5 Cross Sections of Three-Dimensional Figures	Describe the cross sections of a solid.	• I can explain the meaning of a cross section. • I can describe cross sections of prisms and pyramids. • I can describe cross sections of cylinders and cones.