

Abraham and Sarah Science

OPTION #1 Imagery

Supplies

- Salt
- Black paper
- 1/8 teaspoon

Set Up: Set the black paper flat on the floor or table

Today we are going to feed our minds with lots of imagery. What is imagery? (*using words to make pictures in your mind, imagining things*) **Do you like to add salt to a lot of the foods you eat?** (*yes, no*) **Since I said we're going to feed our minds, I thought I'd start with a seasoning image.**

Fill the 1/8 teaspoon with salt. Sprinkle the salt on the black paper. **As we listen to today's videos, imagine you are one grain of salt on this paper.**

Discuss - Why do you think God singled out Abraham, one man among many, to become the patriarch of a large family? Do you think God is only concerned with one person at a time? (*No!*)

What would happen if the Bible contained the stories of everyone God helped? (*It would be too long to read.*) **To keep us from being overwhelmed, we only hear or read the stories of a few people. But everyone is important to God.**

Option #2 Estimation Exercises

Supplies

- Measuring tools: rulers, yardsticks, or measuring tapes
- Paper and Pencils
- Masking tape
- Paper clips
- Stopwatches or clocks with second hands
- Clear plastic jar
- Small items (buttons, marbles, etc.—enough to fill the jar)

Set Up: Place enough of the small items in the clear jar so that it is about one-quarter full. Keep the other items in reserve. Count how many items are in the jar and write that number on a piece of paper.

Activity Instructions

What is the opposite of one? (*many, a lot*) In our story today how many **descendants did God promised Abraham?** (*God promised Abraham that he would be the "ancestor of a multitude of nations" [17:5]. God told Abraham he would be "exceedingly numerous" [17:2].*) **How many is "exceedingly numerous" or a multitude?** (*hundreds, thousands*)

Many times when scientists are talking about really big numbers, they don't use specific numbers, either. They use estimates. For example, if you ask how many bees are in a hive, they don't count each one, they estimate. What other examples can you think of? (*grains of sand, ages of rocks, distance to stars, number of snowflakes, etc.*)

Developing good estimation skills takes practice. It also involves making use of single units, or measurements you already know.

1. Measure your child's height so you have solid numbers to start with. Make sure you write the number down.
2. Now that you know how tall you are, let's put that knowledge to work. Without lying down, use two pieces of tape to estimate your height on the floor. Use your measuring tool to see how close you were.
3. Your body length is a unit. Estimate the floor dimensions, and the distance up to the ceiling of this room, in body lengths. For example, I might estimate the room is $4\frac{1}{2}$ of my body lengths long. A taller person would estimate fewer body lengths, while a shorter person would estimate more body lengths. Write your estimates down on your papers. Use your measuring tools to check all the answers you can.
4. Let's change your unit. How many Books tall are you? Write down your estimate, then work together to check your accuracy.
5. Let's make it even tougher. How many paper clips tall is a book? How many paper clips tall are you? Write down your estimates, and then check their accuracy.
6. Other times, we need to estimate the number of things. For example, in some versions of today's story, God tells Abraham his descendants will be as numerous as the stars. How many is that? (*500; 1,000; 1 billion*) Not even scientists know exactly how many stars there are. They definitely use estimates. One way to get an estimate is to divide space into areas. You count the number of items in one area, and then multiply that number by the number of areas. Look at your jar. Imagine the items in here are the stars you can see at 10 o'clock tonight. I know there are (give the amount) of items in this area. Imagine the rest of the jar represents the areas of sky we would see at 10 p.m. six months from now. Pass the jar around. How many stars would you estimate are visible in our night sky? Write the number down. As they write down their estimates, fill the jar completely full with small items. Count the items and see if your estimate was correct