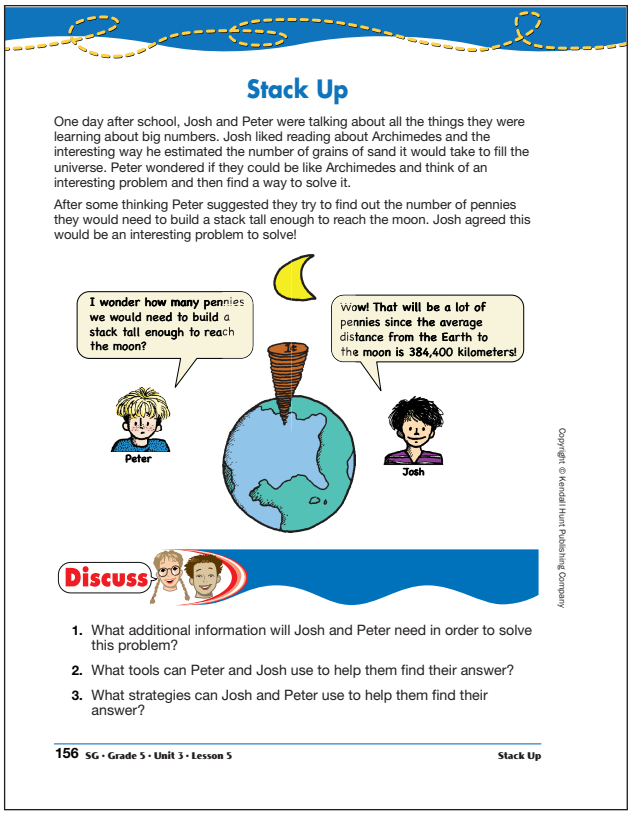

Stack Up

One day after school, Josh and Peter were talking about all the things they were learning about big numbers. Josh liked reading about Archimedes and the interesting way he estimated the number of grains of sand it would take to fill the universe. Peter wondered if they could be like Archimedes and think of an interesting problem and then find a way to solve it.

After some thinking Peter suggested they try to find out the number of pennies they would need to build a stack tall enough to reach the moon. Josh agreed this would be an interesting problem to solve!

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Discuss

1. What additional information will Josh and Peter need in order to solve this problem?
2. What tools can Peter and Josh use to help them find their answer?
3. What strategies can Josh and Peter use to help them find their answer?

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Student Guide

Stack Up (SG p. 156)
Questions 1–3

1.* Possible response: They need to know the thickness of a penny or a stack of pennies. They need to know how many centimeters are in a meter and how many meters are in a kilometer.

2.* Possible response: They will need a centimeter ruler or a meterstick and some pennies to measure. They could use a calculator, a table or chart, and maybe some graph paper.

3.* Possible response: They can begin by measuring a small stack of pennies to see how many it takes to make a 1 centimeter stack. Then they can multiply to find out how many it will take for a meter stack, a kilometer stack, and finally a stack that is 384,400 kilometers tall.

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* Answers and/or discussion are included in the lesson.