**Lower Elementary:**

*Question:* Would you rather have one half of a chocolate bar that weighs 280 grams or one half of a chocolate bar that weighs 460 grams? Draw a picture of the candy bars to show why.

**Upper Elementary:**

*Question:* You can find the approximate temperature in Celsius by subtracting 32 from the temperature in Fahrenheit, then dividing that number by 2. A recipe for pecan brittle needs to be heated to 300°F, but your candy thermometer only measures in Celsius. Find the temperature in Celsius to which you should heat the candy.

**Middle School:**

*Question:* Polly is selling candy bars for a fund raiser. She sells caramel chocolate bars for $3 and peanut butter chocolate bars for $4. If she sells twice as many peanut butter chocolate bars as caramel chocolate bars and gets $44 in total, how many of each kind of candy bar did she sell? Solve this problem by using the portioning strategy.

****

**Algebra and Up:**

*Question:* A cylindrical chocolate peppermint cookie has a layer of dark chocolate cookie, a layer of peppermint creme on top, and layer of dark chocolate all over the whole thing. The cookie layer is 2mm thick, the peppermint creme layer is 3mm thick, and the chocolate layer is 1mm thick on all sides. If the whole cookie is 52mm across, then what is the volume of the chocolate peppermint cookie?

**Lower Elementary:**

*Question:* Would you rather have one half of a chocolate bar that weighs 280 grams or one half of a chocolate bar that weighs 460 grams? Draw a picture of the candy bars to show why.

*Answer:* Answers vary.

*Solution:* Half of 280 grams is 140 grams, and half of 460 grams is 230 grams.

A student might want the 230 gram piece of chocolate because it’s bigger or the 140 gram piece because it’s smaller.

**Upper Elementary:**

*Question:* You can find the approximate temperature in Celsius by subtracting 32 from the temperature in Fahrenheit, then dividing that number by 2. A recipe for pecan brittle needs to be heated to 300°F, but your candy thermometer only measures in Celsius. Find the temperature in Celsius to which you should heat the candy.

*Answer:* 134°C

*Solution:* Three hundred degrees Fahrenheit, minus 32 is 268. We can mentally calculate half of 268 by finding half of each place value because each place value has an even digit. Half of 268 is 100 + 30 + 4 = 134°C.

**Middle School:**

*Question:* Polly is selling candy bars for a fund raiser. She sells caramel chocolate bars for $3 and peanut butter chocolate bars for $4. If she sells twice as many peanut butter chocolate bars as caramel chocolate bars and gets $44 in total, how many of each kind of candy bar did she sell? Solve this problem by using the portioning strategy.

*Answer:* 4 caramel chocolate bars

8 peanut butter chocolate bars

*Solution:* Since Polly sold twice as many peanut butter chocolate bars as caramel chocolate bars, we need a number of $3 bars and twice as many $4 bars to make a total of $44 worth of chocolate bars.

Two $4 bars and one $3 are worth $11 altogether. Since $11 × 4 = $44, two peanut butter chocolate bars and one caramel chocolate bar are a quarter portion of the total chocolate bars. Polly sold 2 × 4 = 8 peanut butter chocolate bars and 1 × 4 = 4 caramel chocolate bars.

****

**Algebra and Up:**

*Question:* A cylindrical chocolate peppermint cookie has a layer of dark chocolate cookie, a layer of peppermint creme on top, and layer of dark chocolate all over the whole thing. The cookie layer is 2mm thick, the peppermint creme layer is 3mm thick, and the chocolate layer is 1mm thick on all sides. If the whole cookie is 52mm across, then what is the volume of the chocolate peppermint cookie?

*Answer:* 4,732π mm3

*Solution:* The volume of a cylinder the area of its base multiplied by its height: π × ***r***2 × ***h***. So, the volume of the whole cookie is π × 262 × (2 + 3 + 2) = 4,732π mm3. Note that since the chocolate layer is 1mm thick on all sides, it adds 2mm to the height.