Grades 3-5: Strategies for Rounding

Let's explore some **strategies we can use to round numbers** to a specific place value (hundreds, tens, ones, tenths, etc.).

Example: Round 142.6 to the nearest ten.

- We start by modeling the number 142.6 with a **place value chart. The tens place is** highlighted **because we need to round to the nearest ten.**

- **The number in the next place down is sometimes called the** boss number. Here, it is a **2** in the ones place.

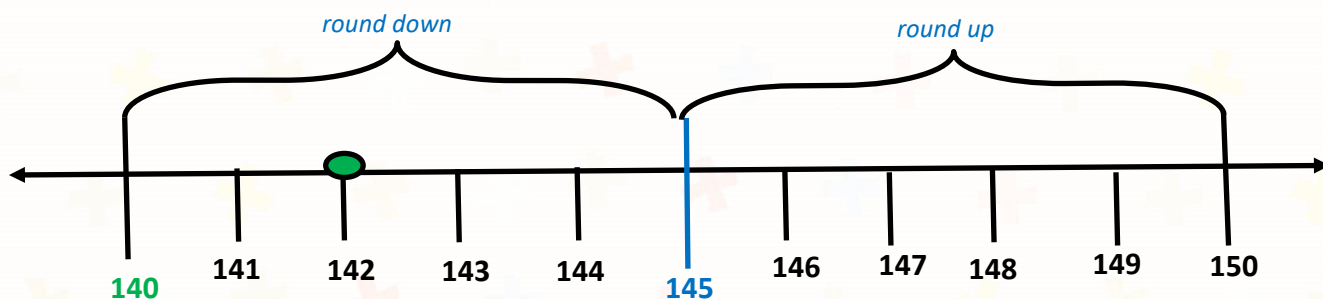| Hundreds	Tens	Ones	.	Tenths	Hundredths
1	4	2	.	6	

- Rounding to the nearest ten means we **have to decide whether 142.6 is closer to 140 (round down) or 150 (round up)**. Think about **counting by whatever place value you have to round to**. In this example, **count by tens:** 130, 140, 150, 160, and so on.

- How do you decide **whether to round down to 140 or up to 150**? Look at the boss number!

- This rhyme can help with the next step:

  4 or less, let it rest.

  5 or more, make it soar!

- The boss number, 2, is "4 or less," so we let the 4 in the tens place rest. In other words, we **round down to 140.**

- Another strategy we can use is a **number line**. We can **make the low end the round-down number, 140,** and **the high end the round-up number, 150**.

- We also **mark the number right in the middle of these two:** 145. (Remember: *5 or more, make it soar!*)

- **142** is to the left of 145 and **closer to 140 than 150**, so it makes sense to **round down to 140.**

Grades 3-5: Rounding Using a Vertical Number Line

- Let's look at our example again, the number **142.6**, but this time, we will **round to the nearest one** and use a **vertical number line**.

- In our place value chart, the **ones place is highlighted** this time, and the **boss number** is in **the tenths place** because that is **one place down** from the ones.

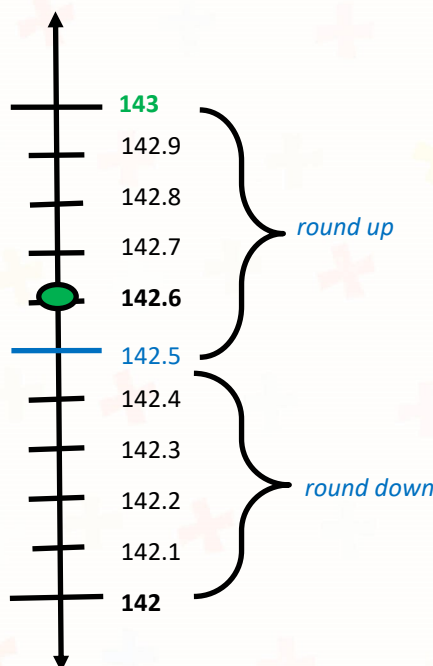| Hundreds	Tens	Ones	.	Tenths	Hundredths
1	4	2	.	6	

- We **have to decide whether 142.6 is closer to 142 (round down) or 143 (round up)**. You can think about **counting by whatever place value you have to round to**. In this example, **count by ones**: 140, 141, 142, 143, and so on.

- How do you decide whether to **round down to 142 or up to 143**? Look the **boss number** and use our rhyme:

  4 or less, let it rest.

  5 or more, make it soar!

- The **boss number 6** is "5 or more," so we let the 2 soar. In other words, we **round up to 143.**

- On Page 1, we used a **horizontal number line**. Sometimes it's helpful to use a **vertical number line** instead. The idea is the same, but the **number we might round up to is on top**, and **the number we might round down to is on the bottom**.

◊ **142** is the **round-down number at the bottom**. **143** is the **round-up number at the top**.

◊ The lines going across the vertical line show that we are **counting up by tenths**.

◊ The green dot shows that **142.6 is in the top part of the number line because it is at 142.5 or higher**.

◊ Therefore, it makes sense that **we round up to 143**.

143
142.9
142.8 } *round up*
142.7
142.6
142.5
142.4
142.3
142.2 } *round down*
142.1
142