

5.4 Anticipating, Selecting, and Sequencing Recording Sheet

Use this recording sheet to show the multiple representations students could create to solve the problem; record the students who use that representation and order the solutions for the consolidation stage.

Representation/ Solution

Students can work to set up a proportion. Looking at the "Charge!" problem they could see that there is a total of 24 minutes between the first and last picture and a total increase of 28% in battery during that time. From here they can set up a proportion.

$$\frac{28\%}{24 \text{ min}} = \frac{95\%}{x \text{ min}}$$

From this proportion they could work to solve it any way they want to solve a proportion. They would eventually find that $x = 81.43$ minutes arriving at a final answer of 1 hour and 21 minutes.

Representation/ Solution

Students could set up a table to see how the difference in time between pictures compares to the difference in percent charged.

8 minutes = 9%
4 minutes = 5%
12 minutes = 14%

Looking at the table, we can see that 4 minutes charged the phone 5%. Students know they are trying to increase the phone battery by 95%, seeing that 5 is a multiple of 95 they can use the information that 4 min = 5% to find how many minutes it would take to get to a 95% increase. After multiplying by a scale factor of 19 they would see that it would take 76 minutes or 1 hour and 16 minutes to reach a full charge.

Representation/ Solution

Students could set up a table to see how the difference in time between pictures compares to the difference in percent charged.

8 minutes = 9%
4 minutes = 5%
12 minutes = 14%

From this table they could find the minutes per 1% unit rate for each of those data points. One that was found they could average them to find that it takes .84 minutes to charge the phone 1%. Next they would multiply by 95 to find that it would take 79.8 minutes to charge the phone an additional 95%.

Students/groups
names

Students/groups
names

Students/groups
names

Order #

Order #

Order #

