


Field Trip

Discuss




Mrs. Dewey's class is taking a field trip to the Field Museum in Chicago. She asked questions while the students were traveling and visiting the museum. The students had clipboards with them, but sometimes it was hard to write.

Solve the following problems as if you are on the field trip. Be ready to show or tell how you solved each problem.

- There are 25 students, Mrs. Dewey, and two parents on the trip. There are 40 seats on the bus. How many empty seats are there?
- While they were traveling, Mrs. Dewey said, "It takes 35 minutes to get to the museum. We have traveled 20 minutes so far. How much longer do we have to travel?"
- Admission to the museum is \$12 for adults and \$7 for students. How much more does each adult have to pay than each student?

When students arrived they saw a skeleton of a dinosaur named Sue and the sign below.

- A third grader usually has 28 teeth. How many more teeth does Sue have than a third grader?
- A human skull weighs about 2 pounds. How much more does Sue's skull weigh?
- How many years ago was Sue discovered?



Sue's Vital Statistics

Scientific Name: Tyrannosaurus Rex

Discovered: August 12, 1990

Length: 42 feet (12.8 meters)

Estimated Live Weight: 7 tons

Weight of Skull: 600 pounds

Number of Teeth: 58


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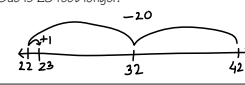
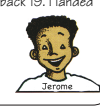
Sue and Kelsey

- Sue is 42 feet long. A model of a triceratops named Kelsey is at the Children's Museum in Indianapolis. It is about 19 feet long. How much longer is Sue than Kelsey?

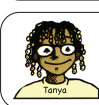


Triceratops

Jerome said, "I drew a number line like this to solve the problem. I started at 42 and went back 20, then forward 1. That is the same as going back 19. I landed on 23, so Sue is 23 feet longer."

Tanya said, "I just counted up. I started at 19 and counted on two tens: 29, 39. I wrote down 20 to remember the 2 tens. Then it is 3 more after 39 to get to 42. 20 + 3 is 23. Sue is 23 feet longer than Kelsey."



Nila said, "I knew it was subtraction, but I tried using expanded form like I did with addition."

$$\begin{array}{r} 42 = 40 + 2 \\ 19 = 10 + 9 \end{array}$$

"Then I got stuck when I tried to subtract 9 from 2. So I thought of trading with base-ten pieces and writing a different number sentence for 42. Here is what I did."

$$\begin{array}{r} 42 = 40 + 2 = 30 + 12 \\ 19 = 10 + 9 = 10 + 9 \\ 20 + 3 = 23 \text{ feet} \end{array}$$

8. Solve $36 - 18$ using either Jerome's, Tanya's, or Nila's strategy.

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

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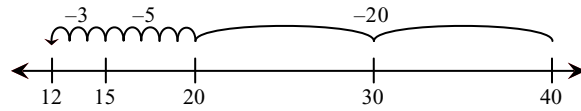
Questions 1–9

For Question 1–6, strategies will vary. Two possible strategies are given for each.

1. * 12 empty seats

$$28 + (2) = 30 \text{ and } 30 + (10) = 40$$

The answer is $2 + 10 = 12$.



2. 15 minutes

I counted back two tens from 35: 25, 15.

I subtracted 20 from 30 and that's 10 and zero from 5 is 5; 10 and 5 is 15.

3. \$5

I know that $12 - 6 = 6$, so $12 - 7 = 5$.

I know that $7 + 5 = 12$, so $12 - 7 = 5$.

4. 30 teeth

$50 - 20 = 30$ and $8 - 8 = 0$, so the answer is 30.

I counted up 3 tens from 28: 38, 48, 58; 3 tens is 30.

5. 598 pounds

I counted back 2 from 600: 599, 598.

I know that 600 is 2 away from 598.

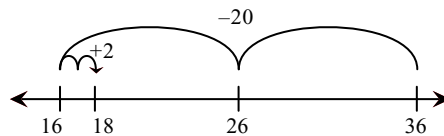
6. Answer will vary depending on the year.

Answers are given for 2014.

Students can count up from 1990 or back from 2014. It is ten years from 1990 to 2000 and then 14 more to 2014, so it has been 24 years.

7. *See strategies in the lesson.

8. Jerome's strategy:



Tanya's strategy: I counted on 10 from 18 to get to 28. I wrote down 10 to remember it. I counted up 2 more to get to 30 and wrote down 2. Then 6 more to get to 36.

$$10 + 2 + 6 = 18.$$

Nila's strategy: $36 = 30 + 6 = 20 + 16$

$$\underline{18} = \underline{10 + 8} = \underline{10 + 8}$$

$$10 + 8 = 18$$

9. Strategies will vary. One possible strategy is given for each.
- A. 26; $35 - 10 = 25$, so $35 - 9$ is one more or 26.
 - B. 940; $980 - 40 = 940$ and $7 - 7 = 0$, so $987 - 47 = 940$.
 - C. 20; Count up 2 tens from 70: 80, 90.
 - D. 75; Think of money. One dollar take away a quarter is 75¢.
 - E. 79; Think of 26 as $20 + 6$; $105 - 6 = 99$ and $99 - 20 = 79$.
 - F. 32; Count up from 68: $68 + 2 = 70$ and $70 + 30 = 100$; $2 + 30 = 32$.
 - G. 165; $264 - 100 = 164$, so $264 - 99$ is one more or 165.
 - H. 80; 14 tens - 6 tens is 8 tens or 80.
 - I. 7; Count up from 97: $97 + 3 = 100$ and $100 + 4 = 104$; $3 + 4 = 7$.

Homework (SG p. 157)

Questions 1–4

- 1. A. 8 B. 36 C. 37
D. 50 E. 44 F. 42
G. 80 H. 56 I. 34
- 2. A. 51 B. 26 C. 58
D. 9 E. 246 F. 251
- 3. Strategies will vary. Two possible responses:
I counted up from 74: $74 + 6 = 80$ and $80 + 20 = 100$; $20 + 6 = 26$
I thought of money. $75¢ + 25¢ = 100¢$, so $74 + 26 = 100$
- 4. 68 feet

Solve the following problems. Be prepared to show or tell your strategy.

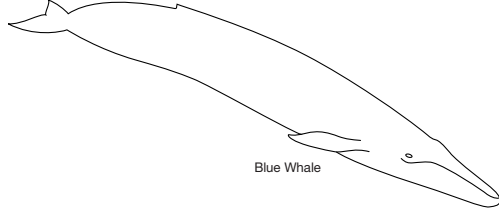
- Which problems can you solve in your head?
- Which problems can you solve by sketching a number line or making a few quick notes?
- Which problems do you need to use pencil and paper to solve?

9. A. $35 - 9$ B. $987 - 47$ C. $90 - 70$
D. $100 - 25$ E. $105 - 26$ F. $100 - 68$
G. $264 - 99$ H. $140 - 60$ I. $104 - 97$

Homework

Solve the problems below in your head by sketching a number line or making a few quick notes.

- 1. A. $15 - 7$ B. $46 - 10$ C. $46 - 9$
D. $80 - 30$ E. $74 - 30$ F. $74 - 32$
G. $150 - 70$ H. $80 - 24$ I. $40 - 6$
- 2. A. $100 - 49$ B. $100 - 74$ C. $107 - 49$
D. $107 - 98$ E. $345 - 99$ F. $300 - 49$
- 3. Explain how you solved Question 2B.
- 4. A blue whale is 110 feet long. How much longer is a blue whale than Sue?



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