Bad Date
Answer Key for Instructors

Watch the animation, *Bad Date*, and complete these activities. The animation and an instructor guide are available on iTunes U (search "Math Snacks") and at **mathsnacks.org**

On her second date, Isabella spoke 36 words, and Diego spoke only 6, for a **6:1 ratio**. In other words, she spoke six times as many words.

Here are examples of 6:1 ratios.

Isabella's words	Diego's Words
36 words	6 words
18 words	3 words
6 words	1 word

1. Use the ratio 6:1 to find the answers.

A. If Isabella spoke **12 words**, how many words did Diego speak?

12 words	*Answer: 2 words*

B. If Diego spoke **20 words**, how many words did Isabella speak?

Answer: 120 words	20 words

C. What if she spoke **60 words**?

60 words	*Answer: 10 words*

D. What if he spoke **32 words**?

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2. "My brother watches five hours of TV for every seven hours that I watch. It's a ratio of 5 to 7 (5:7)." Find the ratio 5:7!
Find the ratio 5:7!

Brother's TV Time	Sister's TV Time
5	7

A. If the brother watched **10 hours** of TV over the weekend, how much TV did the sister watch?

Answer: 10 hours	*Answer: 14 hours*

B. If the brother watched **1 hour** of TV, how much TV did the sister watch?

Answer: 1 hour	*Answer: 1 hr., 24 min., or 84 min.*

C. If the sister watched **10.5 hours**, how much TV did the brother watch?

Answer: 7.5 hours; or 7 hours, 30 min.	*Answer: 7.5 hours; or 7 hours, 30 min.*

NOTE: Please offer some guidance for 2b. and 2c. because students must take into consideration the conversion from hours to minutes before doing the ratio. If this is too difficult, do this as a large group.

There are lots of situations in which **1:1 ratios** are desirable – or even required. For example, in a basketball game, each team has 5 players on the court, so the ratio of players is 5:5 or 1:1. Likewise, in a football game, each team fields 11 players, so the ratio is 1:1.

3. Can you think of three other situations in which a 1:1 ratio is desirable?

Answers will vary. Possible answers could include: marriage or dating, a party with boys to girls, piece of dessert for each person eating at a party.

Instructors: There are many possible answers. Ask students to explain why they feel a 1:1 ratio is desirable for the situations they choose.

There are lots of situations in which **1:1 ratios** are not desirable or possible. For example, in a bus, there could be 1 bus driver for 44 students, so the ratio of bus drivers to students would be **1:44**.

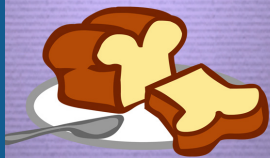### 4. Can you think of three situations in which a 1:1 ratio is not desirable or possible?

Answers will vary. Possible answers could include: referees to players, slices of pizza to hungry kids, teachers to students in a classroom

Instructors: There are many possible answers. Ask students to explain why they feel a 1:1 ratio is not desirable for the situations they choose.

At the end of the last date, the ratio of words was **57:56**.

57 : 56
Isabella : Harvey

5. Why did Harvey say "bread"?

Answer: Harvey said "bread" to make the ratio exactly 57:57, or 1:1.

A. If Harvey had not said "bread," would Isabella still consider it a one-to-one ratio? Explain.

Answer: Yes. The ratio is close enough to 1:1 for this situation.

B. What other ratios would be acceptable for Isabella to consider the date successful? Explain.

Answer: Any ratio that closely resembles a 1:1 ratio would be acceptable. For example, 42:35, when rounded, is close to 40:40, a 1:1 ratio. In some situations, estimation is acceptable as long as students can justify answers or it is reasonable mathematically.