

Island Numeracy Assessment

Computational Fluency B (multiplication/division) Grade 3+

Collaborative Task: (consider projecting image)



Your class photo is being taken today. Could your class be divided equally in three rows? What if some students were away? What if the photographer needed 4 rows? How many students would be in each row?

Show different ways to solve and explain your thinking.

Extension: What if two more students joined our class? What If all students were here today? What if we combined with a class from next door?

Sample responses:

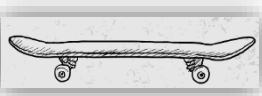

There are 24 kids in my class today. With 4 benches, 6 kids can sit on each bench. We can divide into equal groups.

There are 19 students here today. We cannot divide up equally on 4 benches. There will always be people in uneven groups on the benches. If two more people joined we still would not divide equally. We could divide equally if 1 student joined the group.

If Division 14 joined our class of 24 we would have $24 + 26 = 50$ students. This number of students can not share 4 benches equally. The benches would be full and there would be 2 students left over. 48 students could divide into 12 equal rows.

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Computational Fluency B (multiplication/division) Grade 3+ (Answer Key)

Assessment Question	Answer Key															
<p>1. Solve the following question using two different strategies:</p> <p style="text-align: center;">$3 \times 6 =$</p> <p>Explain your strategies using words, pictures, and/or numbers and symbols.</p> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; padding: 10px; width: 45%; min-height: 200px;"> <p>One way I solved the question:</p> </div> <div style="border: 1px solid black; padding: 10px; width: 45%; min-height: 200px;"> <p>A second way I solved the question:</p> </div> </div>	<p>Groups of, arrays and repeated addition.</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr> <tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr> <tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr> <tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr> <tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr> </table> <p>$6 + 6 + 6 = 18$</p> <p>Look for invented flexible, efficient strategies.</p> <p>Students may compose a story-problem context to represent thinking visually</p>															
<p>2. Choose a number of kids to be at the skateboard park.</p> <div style="text-align: right; margin: 10px 0;">  </div> <p>Some of the children are riding skateboards and some of them are using scooters.</p> <div style="text-align: right; margin: 10px 0;">  </div> <p>How many wheels are there all together? Write a number sentence to describe the situation.</p> <p style="margin-top: 20px;">Repeat for other combinations of skateboards and scooters. (Adapted from Marian Small, Open Questions for Rich Math, 2016, p.125)</p>	<p>There are 13 people at the park. 3 people are riding scooters and the other 10 are riding skateboards.</p> <p>$3 \times 2 = 6$ $10 \times 4 = 40$ $40 + 6 = 46$ wheels</p> <p>17 kids come to the skateboard park. 9 kids are riding scooters, 8 kids have skateboards.</p> <p>$9 \times 2 = 18$ $8 \times 4 = 32$ $32 + 18 = 50$ wheels</p> <p>30 kids are at the park. All but one are riding skateboards.</p> <p>$29 \times 4 = 116$ $116 + 2 = 118$ wheels or 20 groups of 4 = 80 9 groups of 4 = 36 $80 + 36 + 2 = 118$ wheels</p>															

3. Solve the following question using two different strategies:

$$18 \div 3 =$$

Explain your strategies using words, pictures, and/or numbers and symbols.

One way I solved the question:

A second way I solved the question:

Draw an array or repeated subtraction, groups of, number line, bar model

18		
6	6	6

4 Some friends shared 36 Fun Fair tickets. Each person received the same number of tickets. How many friends might there have been? How many tickets did each friend receive? Draw a picture to show your answer. **Show other possibilities.**

(Adapted from Marian Small Open Questions for Rich Math, 2016, p.127)



You could have 4 friends with 9 tickets each.

2 friends with 18 tickets.

3 friends with 12 tickets each

6 friends with 6 tickets each

Look for invented flexible, efficient strategies.

The story-problem contexts can help students make sense of division.

In this situation student knows the **number of tickets** and is to **represent fair shares**.

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Performance Task:

East Lake School is fundraising. They are selling popcorn in recyclable paper buckets. Their fundraising goal is \$100.

Caramel Flavoured Popcorn \$5 a bucket	Cheese Flavoured Popcorn \$4 a bucket	Butter Flavoured Popcorn \$3 a bucket
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Sam sold 10 buckets of caramel-flavoured popcorn.

$\$50$

Manjit sold 4 buckets of cheese-flavoured and 2 buckets of caramel-flavoured popcorn.

$\$16 + \$10 = \$26$

Mark sold cheese-flavoured popcorn. He raised \$32.00.

Ruby's mother bought 3 butter-flavoured buckets of popcorn to take home.

$\$3 \times 3 = \9



Did East Lake School reach its fundraising goal? Show your thinking below.

$\$50 + \$26 + \$32 + \9

$\$76 + \$41 = \$117$

East Lake School met their goal of raising \$100.