## Division Fact Strategies

## GOAL

Use strategies to relate unknown facts to known facts.


Desmond received a deck of 48 Hwa-Yu cards (Korean flower cards) as a gift. There were no instructions with the cards, so Desmond decided to invent a game.

Here are 2 of his rules:

- All players start with the same number of cards.
- There must be fewer than 10 players, and each player must have fewer than 10 cards.
?. How many players can play Desmond's game with the 48 cards if there are no leftover cards?



## Desmond's Division

I need to divide the 48 cards into equal groups.
I'll look for pairs of numbers that I can multiply together to make 48.

6 players can play my game.

A. If 6 players play the game, how many cards will each player have?
B. Desmond's array shows another possible number of players. What is it?
C. What 2 multiplication facts does Desmond's array show?
D. What 2 division facts does Desmond's array show?
E. How can you use skip counting by 5 s to show that there cannot be 5 players?
F. Could there be other numbers of players (less than 10) with no leftover cards? Explain how you know.

## Reflecting

G. Why is creating an array a useful way to figure out a division fact?
H. Suppose you know that $9 \times 6=54$ or that $6 \times 6=36$. How can you use either of these facts to solve the problem about the 48 cards?

## Communication Tip

When you talk about your division equations, it might help to recall the names of the parts.


## Checking

1. If Desmond's game used 36 cards instead of 48 cards, how many players could play his game? Use arrays.
2. What multiplication fact can you use to solve $32 \div 4=$ ?

## Practising

3. Sketch an array to complete each division equation.
a) $18 \div 2=$
b) $49 \div 7=$
c) $24 \div 4=$
d) $42 \div 6=$
e) $35 \div 7=$
f) $56 \div 8=$
4. You can use multiplication facts to solve division equations. List two division equations for each fact below.
a) $4 \times 7=28$
b) $3 \times 9=27$
c) $5 \times 8=40$
d) $7 \times 5=35$
5. A 300 mL bottle of oil has 0 g of trans fat. The oil is divided equally into several other containers.
a) How many grams of trans fat are in each container?
b) Write an equation you can solve to answer part a) if there are four containers.
c) Does your answer for part a) depend on the number of containers? Explain your thinking.
6. a) Explain how you know that $5 \times 0=0$.
b) Use your explanation for part a) to explain why $0 \div 5=0$.
c) Write a multiplication equation that you think you can use to calculate $5 \div 0=$
d) Is it possible to calculate $5 \div 0=\square$ ? Explain why or why not.
e) Is it possible to divide any number by 0 ? Use multiplication facts to show why or why not.
7. Sketch an array to show that $4 \times 10=40$. Use your array to solve each equation.
a) $40 \div 4=p$
b) $40 \div 5=a$
c) $s=40 \div 8$
8. Brandon calculated $63 \div 9$ by recalling that $45 \div 9=5$ and then skip counting forward by 9 s to 63.

| $45 \div 9=5$ |  |
| :---: | :---: |
| $63 \div 9=5+2$ | $\bigcirc$ |
| $\div 9=1$ | 45 |

Use a strategy like Brandon's to calculate each quotient.
a) $28 \div 7$
b) $42 \div 6$
c) $32 \div 4$
d) $32 \div 8$
9. Teresa calculated $56 \div 8$ by recalling that $64 \div 8=8$ and then skip counting backwards by 8 s to 56 .
$64 \div 8=8$
$56 \div 8=8-1$
$56 \div 8=7$


Use a strategy like Teresa's to calculate each quotient.
a) $42 \div 7$
b) $42 \div 6$
10. Eric's birthday is 49 days away. How many weeks away is his birthday?

| MARCH |  |  |  |  |  |  |  |
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| 9 | 10 | 11 | 12 | 13 | 14 | 15 |  |
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| APRIL |  |  |  |  |  |  |  |
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| 20 | 21 | 22 | 23 | 24 | 25 | 26 |  |
| 27 | 28 | 29 | 30 |  |  |  |  |
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11. Jose needs to re-shelve 35 books in the school library. If he carries 5 books on each trip, how many trips does he need to make?
12. A square and a regular hexagon each have a perimeter of 36 cm . How much longer is the side length of the square than the side length of the hexagon?
13. Jen says that if you know your multiplication facts, then you already know your division facts. Do you agree? Explain, using an example.
