

Numbers and place value

A digit's place tells us its value.

CONCEPT

Ten thousands	Thousands	Hundreds	Tens	Ones
2	1	0	4	7

21 047 = 20 000 + 1 000 + 40 + 7. Zero holds the hundreds place.

Compare from the left. The first different place decides.

1 Write each number in digits.

a sixteen thousand and eight

b thirty thousand and sixty

c eight thousand four hundred and nine

d twenty-two thousand five hundred and three

2 Use place value.

a Value of 4 in 24 106:

b Value of 7 in 17 032:

c Value of 6 in 16 405:

d Value of 9 in 29 014:

Write 20 708 in words.

3 Order and insert.

Order from smallest to largest: **20 070, 19 980, 20 700, 20 007, 21 000.**

Insert **20 050** and **20 705**. Write all seven in order.

4 Check a claim.

"15 306 is smaller than 15 280 because 0 is smaller than 8."

Is the claim correct? Explain the first place that is different.

Fractions of a whole

Equal parts make a whole.

CONCEPT

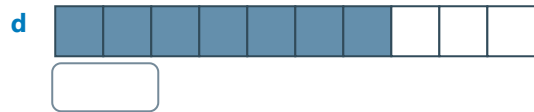
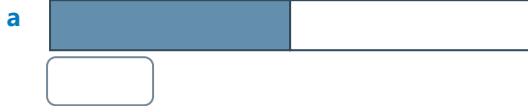


2 of 5 equal parts shaded = $\frac{2}{5}$.

$$\frac{2}{5} + \frac{3}{5} = 1 \text{ whole.}$$

The denominator counts all equal parts.
The numerator counts the chosen parts.

1 Name the shaded fraction. Each strip is one whole.



2 Shade the named fraction. Each strip is one whole.



3 Complete each whole. Write both fractions.



4 Compare parts of equal-sized wholes.

Shade one third of the first strip and one fifth of the second.



Which shaded part is larger? Explain using equal-sized wholes.

Times and card rules

Compare durations. Use equal groups to find totals.

CONCEPT

1 minute = 60 seconds

74 seconds = 60 + 14 seconds
= 1 minute 14 seconds.

A smaller time means a faster finish.

2 cards for each player

3 players $\times$ 2 cards = 6 cards.

One more player adds 2 cards.

1 Compare finishing times for the same course.

Times: **53 seconds, 68 seconds, 61 seconds, 57 seconds.**

Fastest to slowest:

2 Convert the times.

a 68 s = min s

b 61 s = min s

c 85 s = min s

d 1 min 12 s = s

Which is longer: 59 seconds or 1 minute 3 seconds? Explain.

3 Each player gets 4 cards. Complete the table.

Players	1	2	3	4	5	6
Total cards						

What happens to the total when one more player joins?

4 Create and use your own card rule.

Choose **3, 5 or 10** cards for each player. My choice:

Players	2	3	4	5
Total cards				

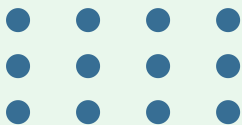
Write steps that work for any number of players.

7 players need cards. One more player adds cards.

Equal groups and related facts

Multiplication and division undo each other.

CONCEPT



3 equal groups of 4 make 12.

$$3 \times 4 = 12 \quad 12 \div 4 = 3$$

$$4 \times 3 = 12 \quad 12 \div 3 = 4$$

1 Make equal groups.

Pack **35 counters** into bags with **5 counters in each bag**. How many bags?

Draw equal groups or an array to prove your answer.

a Multiplication:

b Related division:

2 Complete each multiplication fact and related division fact.

a $3 \times \boxed{} = 21$

$21 \div 3 = \boxed{}$

b $5 \times \boxed{} = 45$

$45 \div 5 = \boxed{}$

c $10 \times \boxed{} = 60$

$60 \div 10 = \boxed{}$

d $3 \times \boxed{} = 27$

$27 \div 3 = \boxed{}$

e $5 \times \boxed{} = 20$

$20 \div 5 = \boxed{}$

f $10 \times \boxed{} = 80$

$80 \div 10 = \boxed{}$

3 Use a fact family.

Use **3, 8 and 24** to write two multiplication facts and two division facts.

a

b

c

d

Explain how knowing a multiplication fact helps you divide.

4 Solve and show your thinking.

a 40 pencils, 10 in each pot. How many pots?

b 5 teams have 6 players each. How many players?

Follow and create steps

An algorithm is a set of precise steps.

CONCEPT

Record → add → test → repeat or stop.

Example: start at 5, record, add 5, stop if the new number is greater than 15.

Record **5, 10, 15**. The next number is 20, so stop before recording it.

1 Follow these steps. Write every recorded number.

1. Start with 3.
2. Record the current number.
3. Add 3.
4. Is the new number greater than 30? If yes, stop. If no, go back to step 2.

Describe the pattern.

2 Explain the stopping decision.

a Is 30 recorded in Question 1? Explain.

b Is 33 recorded in Question 1? Explain.

3 Create and test your own steps.

Record the **5 times-table numbers from 5 to 30, including 30**. Write steps or draw a flowchart. Include a decision that tells you when to stop.

Use your steps. Write all recorded numbers.

4 Find numbers shared by two patterns.

Which numbers appear in both your Question 1 and Question 3 lists?

Explain how you checked that you found every shared number in the lists.