# An introduction to Bar Modelling



## Solving Problems with Bar Modeling

**Part-Part-Whole**
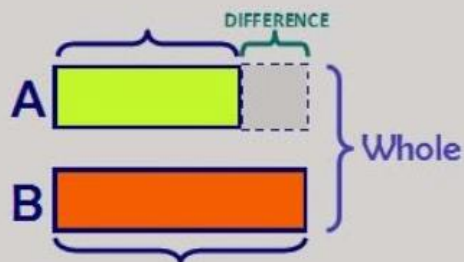
| Part | Part |
|------|------|

Whole

**Comparison**

DIFFERENCE

A

B

**Equal Parts of a Whole**
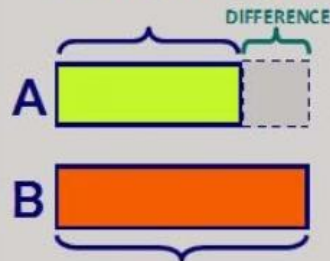
| Part | Part | Part | Part | Part |
|------|------|------|------|------|

Whole

an Equal Part is a UNIT

**Comparison AND Part-Part-Whole**

DIFFERENCE

A

B

Whole

**Comparison AND Equal Parts of Wholes**

A

| Part | Part | Part |
|------|------|------|

DIFFERENCE

B

| Part | Part | Part | Part | Part |
|------|------|------|------|------|

Whole

an Equal Part is a UNIT

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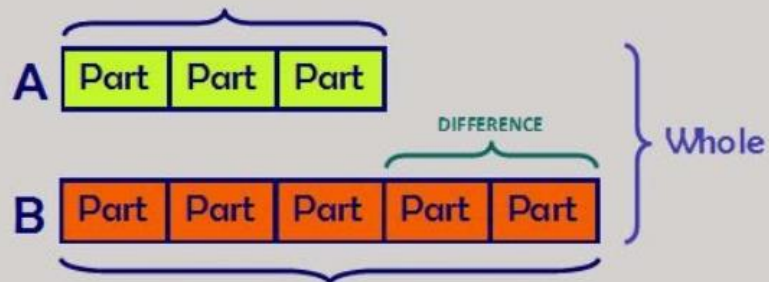
# What Is Bar Modelling?

Bar modelling is where pictures or 'bars' are
used to represent calculations and word problems.
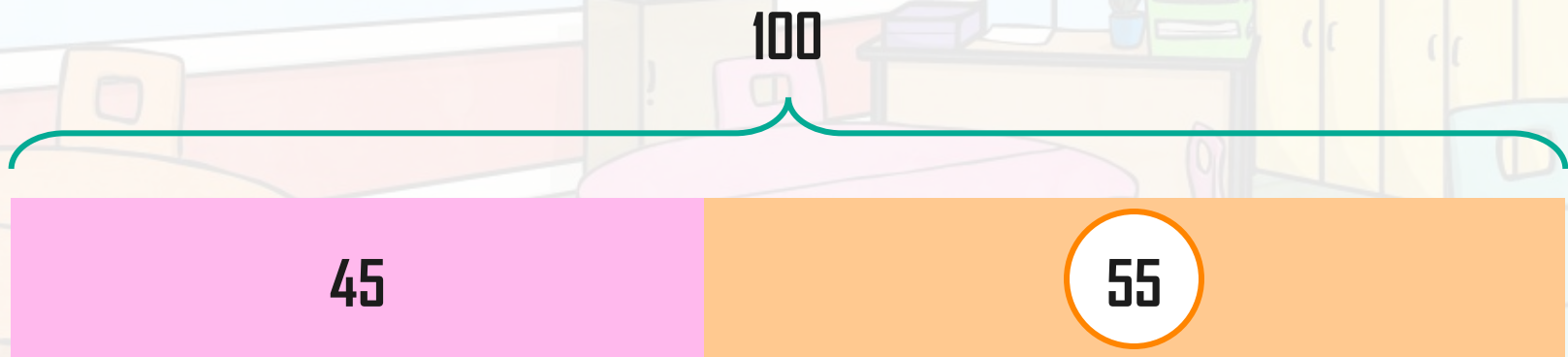
# Why Use Bar Modelling?

Sometimes calculations and word problems are difficult to visualise
in your head. Bar models help you to *see* the maths more clearly.

Once you become confident in using bar models, you can use
them to help your learning in many different areas of maths.

So where and how can bar models help you
with addition and subtraction problems?

# Bar Modelling

Look at this simple bar model.
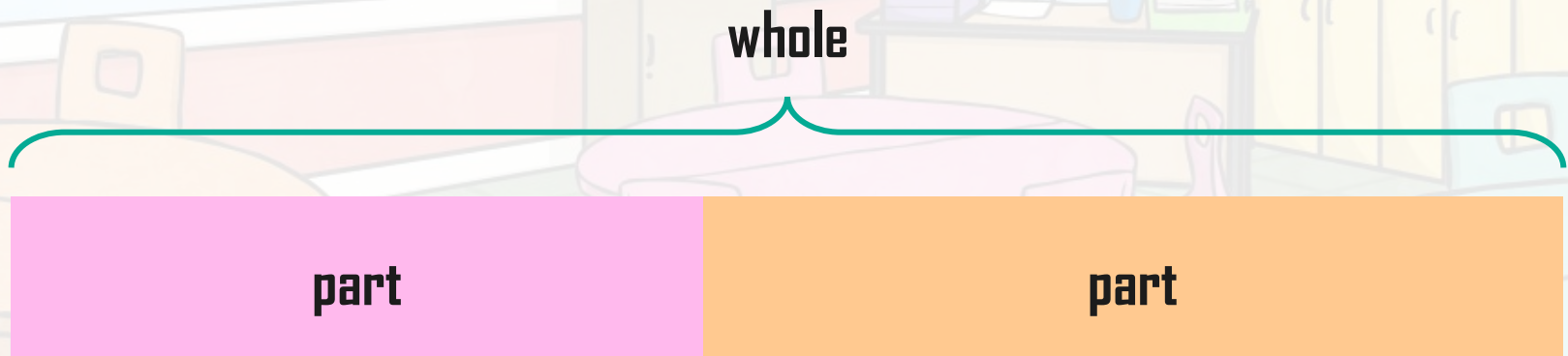What addition and subtraction calculations could it represent?

100

| 45 | 55 |

$45 + ? = 100$
$100 - 45 = ?$

$45 + 55 = 100$
$100 - 45 = 55$

So what number is missing from the bar model? How do you know?

# Bar Modelling

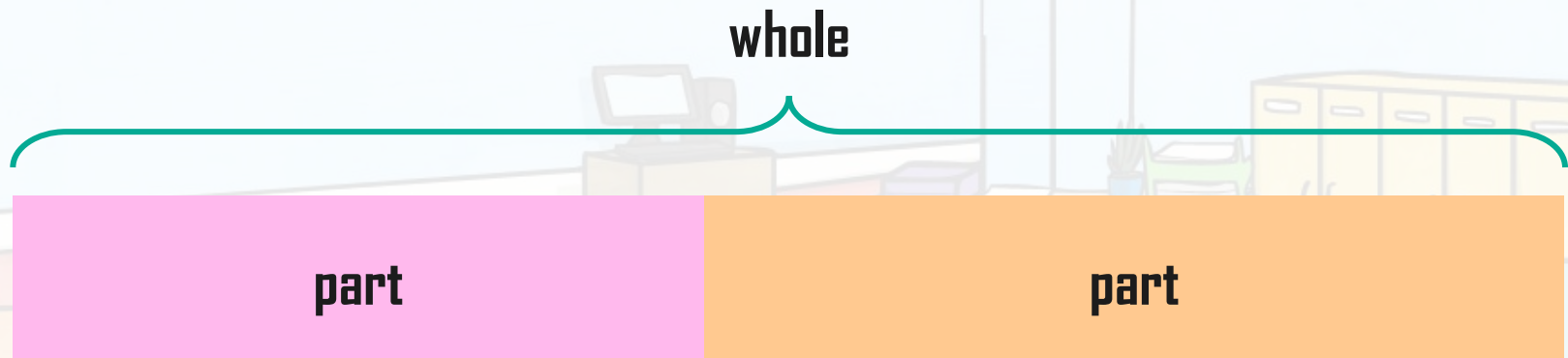In this type of inverse calculation there are always three **unknown** numbers.

whole

| part | part |
|------|------|

To solve the problem, you just need to know **two** of the **unknown** numbers.

# Bar Modelling

whole

| part | part |
|:---:|:---:|

part + part = whole

whole − part = part

whole − part = part

# Now it's your turn...

Could you tell me an addition or subtraction calculation to go with this bar model?

100

21 | 79

? + 79 = 100
100 – 79 = ?

21 + 79 = 100
100 – 79 = 21

# Now it's your turn...

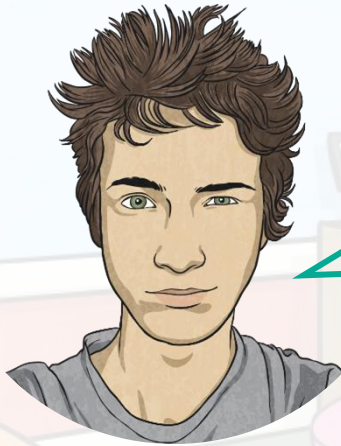Could you work with more complex numbers?

267

| 191 | 76 |

191 + **?** = 267

267 − 191 = **?**

191 + **76** = 100

267 − 191 = **76**

# Now it's your turn...

What about this bar model? What kind of calculation do you need to perform here?
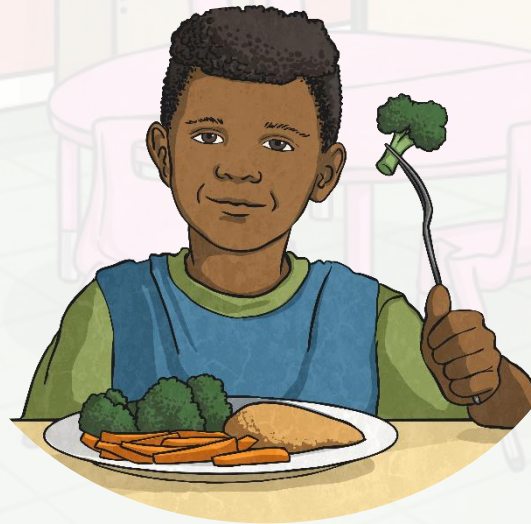
523

126 397

126 + 397 = **?**
126 + 397 = **523**

# Using Bar Models to Solve Word Problems

Sunnymore Primary School has 284 pupils.
218 of the children have a school lunch and the rest bring a packed lunch.
How many children bring a packed lunch?

Can you think how a bar model could look for this problem?

# Using Bar Models to Solve Word Problems

Sunnymore Primary School has 284 pupils.
218 of the children have a school lunch and the rest bring a packed lunch.
How many children bring a packed lunch?

| 284 pupils | |
|:---:|:---:|
| 218 | ? |
| school lunches | packed lunches |

# Using Bar Models to Solve Word Problems

So how many children bring a packed lunch?

284 – 218 = **66**

| 284 pupils | |
|---|---|
| **218** | **66** |
| school lunches | packed lunches |

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# Using Bar Models to

# Solve Word Problems

Grace went on a shopping spree with her birthday money.
She spent £287 on clothes and £98 on some new computer game.
How much did she spend in total?

Can you think how a bar model could look for this problem?

# Using Bar Models to

# Solve Word Problems

Grace went on a shopping spree with her birthday money.
She spent £287 on clothes and £98 on some new computer game.
How much did she spend in total?

| ? | |
|---|---|
| **£287** | **£98** |
| clothes | computer game |

# Using Bar Models to Solve Word Problems

So how much did Grace spend in total?

£287 + £98 = **£385**

| £385 | |
|:---:|:---:|
| £287 | £98 |
| clothes | computer game |

# Things to Remember

Draw a rectangle for your 'bar' on your whiteboard, sheet or book.

Label the parts of your bar.

Decide whether you need to do an addition or a subtraction calculation.

**whole**

**part**          **part**