Change or Part-Part-Whole?

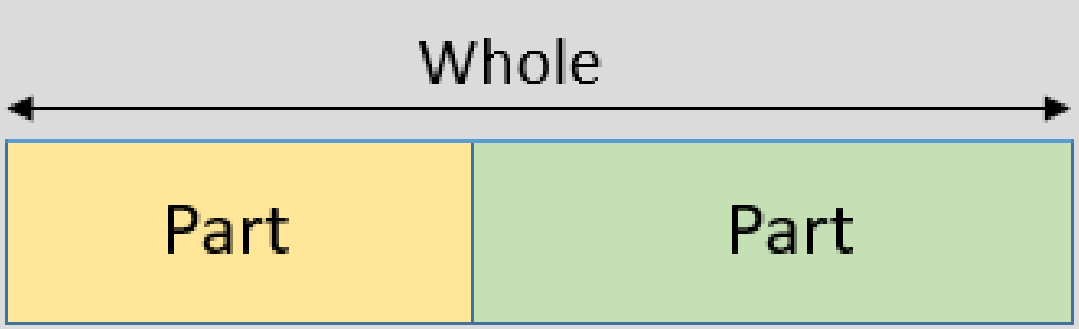
Sarah has 13 small crayons and 5 big crayons. How many does she have in all?

Part-Part-Whole

What are the parts?

Part-Part-Whole Models

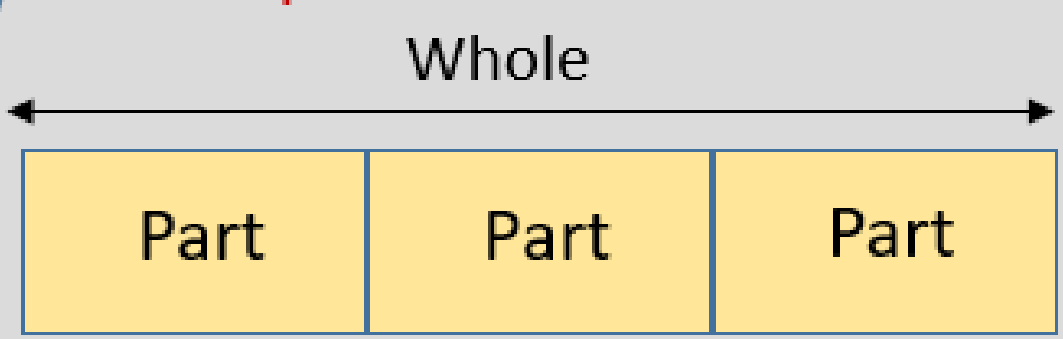
Part-Part-Whole



Whole = Part + Part

Part = Whole – Part

Equal Parts of a Whole



Whole = Part x Number of Parts

Part = Whole ÷ Number of Parts

Number of Parts = Whole ÷ Part

Calvin had 8 ribbons. Sadie gave him 5 more. How many ribbons does Calvin have now?

Change Problem

What changed?

Change Problem Models

There were 5 girls in the classroom. 11 more girls came in. How many girls are in the classroom now?

Change Problem

What changed?

Brooke had 18 ribbons. She gave some of them to Mike. Now Brooke has 12 ribbons. How many did she give Mike?

Change Problem

What changed?

There are 18 birds on the tree. 11 are blue jays and the rest are cardinals. How many are cardinals?

Part-Part-Whole

What are the parts?

There are 13 bugs in the garden. 6 are caterpillars and the rest are ladybugs. How many are ladybugs?

Part-Part-Whole

What are the parts?

There were 10 swans on the lake. Some more joined them. Now there are 15 swans on the lake. How many swans joined?

Change Problem What changed?

Emma has 19 pencils. How many could be long and how many could be short?

Part-Part-Whole

What are the parts?

There were 17 blue jays in the tree. 8 of them flew away. How many blue jays are left in the tree?

Change Problem

What changed?

Change Problem Models

Setting up the model correctly matters – let's see why!

?
+
−
5
=
10
Start
Change
Result

?
±
7
=
9
Start
Change
Result

There were some blue jays in the tree. 8 of them flew away and now there are 5. How many blue jays were in the tree?

Change Problem What changed?

There were some bugs in the garden. Edmond brought 4 more from the porch. Now there are 18. How many were there to start?

Change Problem

What changed?

Gemma has 18 babies. 7 are dolls, 3 are bears, and the rest are zoo animals. How many zoo animals does she have?

Part Part Whole

What are the parts?

Mrs. S bought 6 shirts. She returned 2 of them to the store, then bought 5 other shirts. How many shirts does she have?

Change Problem What changed?

Gemma ate 8 apple slices. She got 4 more from her brother, then 2 more from the bowl. How many slices did Gemma eat?

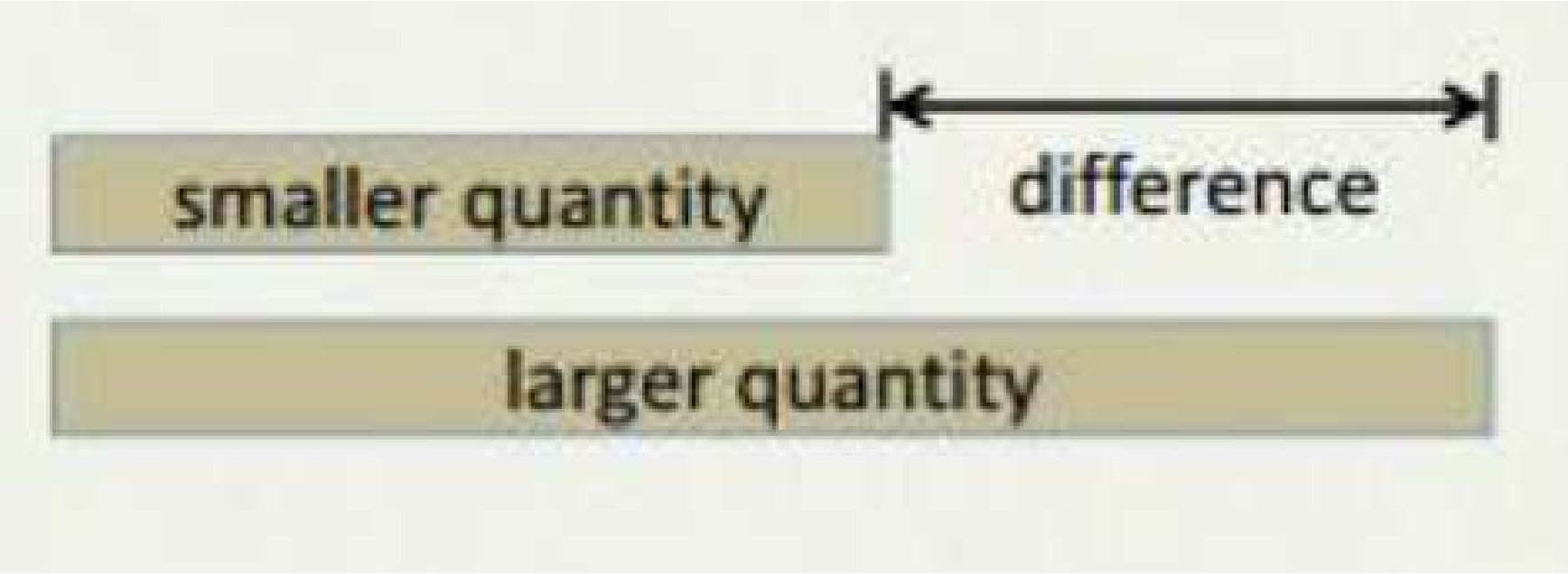
Change Problem What changed?

The office cabinet has 16 pens. 7 are red pens, 4 are blue pens, and the rest are black. How many pens are black?

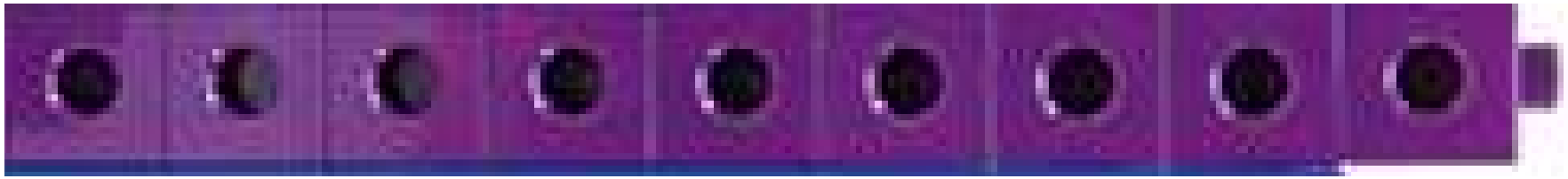
Part Part Whole

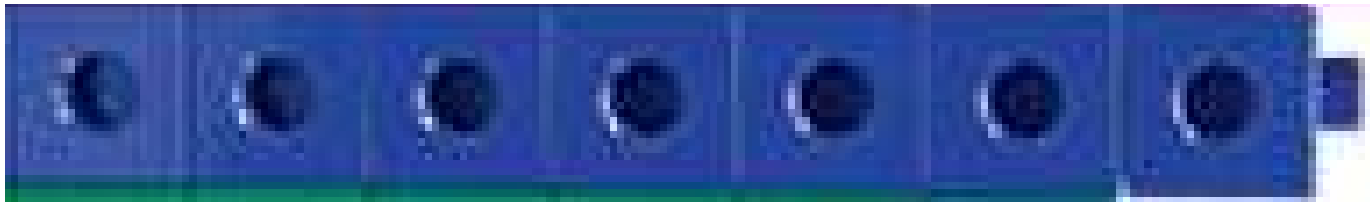
What are the parts?

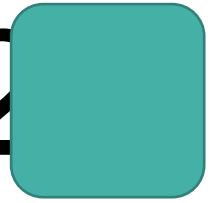
Comparison Style



Real World Comparison model





Lucas has more grapes than Josie. Lucas has 2  grapes. How many grapes does Josie have?

Compare

What's the larger value?

There are more swans than ducks on the pond. There are swans. How many ducks are there?

Compare

What's the larger value?

There are ants and 7 ladybugs in the garden. How many fewer ladybugs are there than ants?

Compare

What's the larger value?

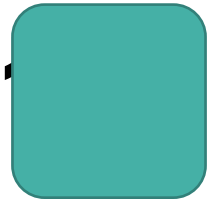
There are fewer boys than girls in the lunchroom. There are 12 boy How many girls are there?

Compare

What's the larger value?

There were some dimes in the piggy bank. 20 mo[redacted]were put in. Now there are 38 di[redacted]s in the piggy bank. How many dimes were in the piggy bank to start?

Change What changed?

There are animals on the ranch.  are cows and the rest are goats. How many of the animals are goats?

Part Part Whole

What are the parts?

There are more goats than horses on the ranch. There are horses. How many goats are there?

Compare

Which is worth more?

2 step problems

Brainstorm potential questions, then reveal

Edmond had a bunch of markers. He gave 7 to his sister. Then he threw away 5 that were dry. There are still 14 markers in his pencil box.

How many markers did Edmond start with?

Sam brings $42 to the mall. She buys a hat for $18 and a t-shirt for $15. She spends the rest at the candy shop.

How much money did Sam spend on candy?

There are 25 more bananas than oranges in the cafeteria. There are 17 oranges.

_____

How many fruits are there all together?

Tina and her sister have 50 pieces of candy all together. Tina has 10 more pieces than her sister.

How many pieces of candy does her sister have?

The library has 62 graphic novels. There are 8 fewer magazines than graphic novels in the library collection.

How many items are there all together?