

$$137 = \boxed{100} + \boxed{\text{---}} + \boxed{7}$$

$$137 = \boxed{100} + \boxed{20} + \boxed{\text{---}}$$

$$237 = \boxed{100} + \boxed{\text{---}} + \boxed{\text{---}}$$

$$364 = \boxed{\text{---}} + \boxed{60} + \boxed{4}$$

$$364 = \boxed{300} + \boxed{50} + \boxed{\text{---}}$$

$$824 = \boxed{700} + \boxed{\text{---}} + \boxed{\text{---}}$$



Learning Question:

How can I use bar models to find number fact families ?

Success Criteria:

- Represent calculations on a bar model
- Understand addition as a part + a part = a whole
- Understand subtraction as a whole - a part = a part
- Know that addition is commutative.
- Know that subtraction is not commutative.

Stem sentences :

Part + Part = Whole

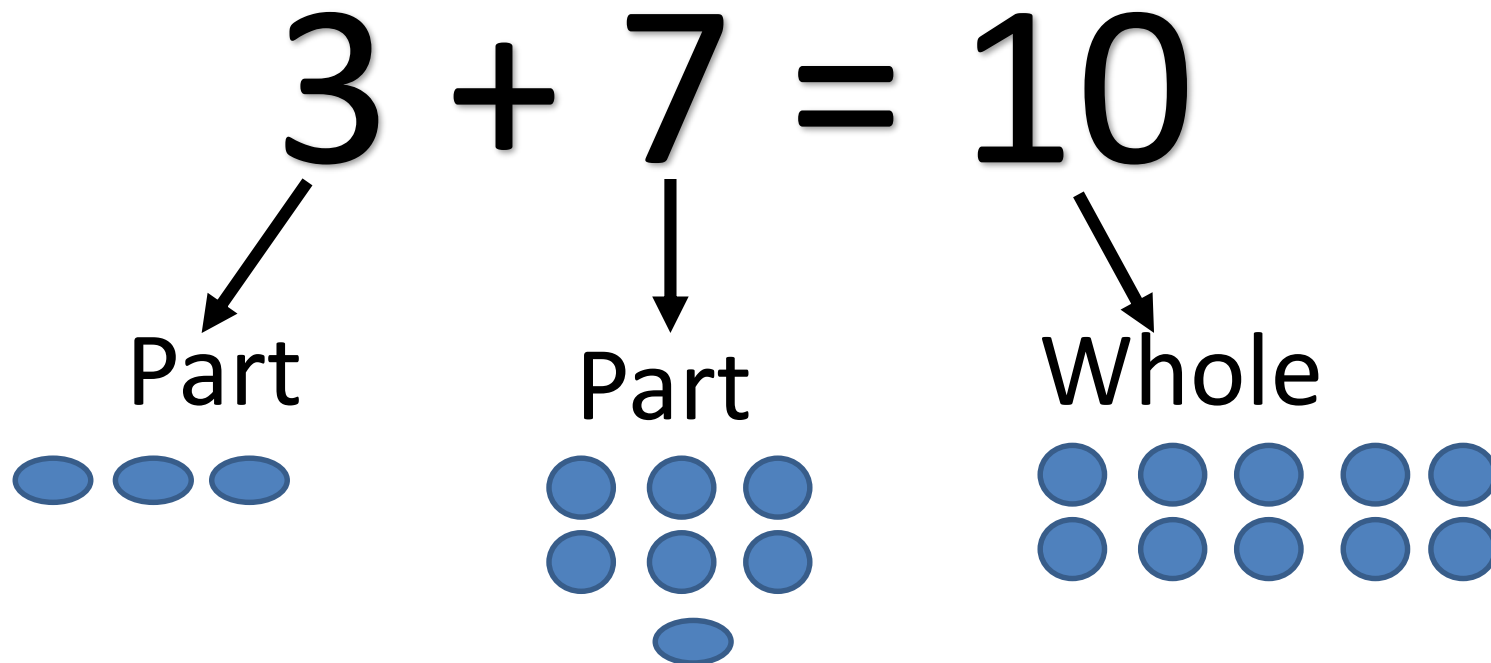
Whole - Part = Part

Vocabulary

- Addition
- Subtraction
- Bar model
- Part
- Whole

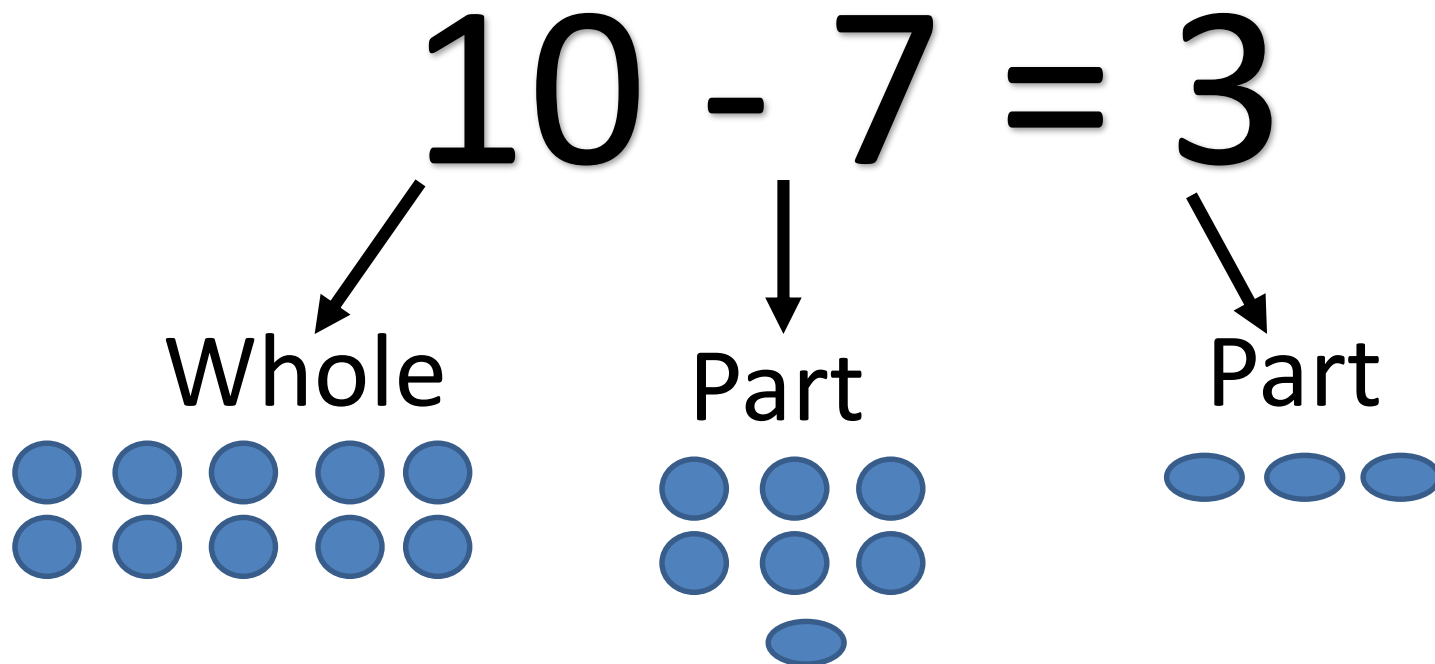
Part + Part = Whole

Whole	
Part	Part



$$\text{Whole} - \text{Part} = \text{Part}$$

Whole	
Part	Part



We know ...

$$3 + 7 = 10$$

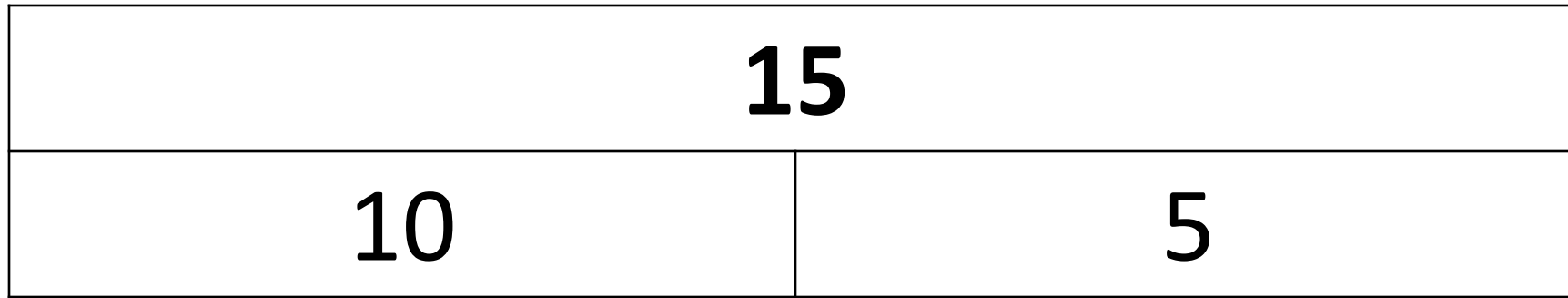
$$10 - 7 = 3$$

So what is ...

$$10 - 3 = ?$$

$$7 + \underline{\quad} = 10$$

What calculations do we know from this bar model?



$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

What calculations do we know from
this bar model ?

96	
42	54

$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

What calculations do we know from this bar model?



$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad} \quad \underline{\quad} - \underline{\quad} = \underline{\quad}$$

Your tasks

Hard:

Number fact families – up to 10

Harder:

Number fact families – up to 20

Hardest:

Number fact families – 2 digit numbers

Herculean:

Number fact families – 3 digit numbers

Solve the calculation and show the 3 other calculations that you can deduce

Hard	Hard	Harder	Harder
<p>1. $1 + 9 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p> <p>2. $2 + 8 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p> <p>3. $3 + 7 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p>	<p>4. $4 + 6 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p> <p>5. $5 + 5 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p> <p>6. $9 + 1 = \underline{\quad}$ So $\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$</p>	<p>1. $18 + 2 = \underline{\quad}$ So I know : 1. 2. 3.</p> <p>2. $15 + 5 = \underline{\quad}$ So I know 1. 2. 3.</p> <p>3. $13 + 7 = \underline{\quad}$ So I know 1. 2. 3.</p>	<p>4. $12 + 8 = \underline{\quad}$ So I know : 1. 2. 3.</p> <p>5. $3 + 17 = \underline{\quad}$ So I know 1. 2. 3.</p> <p>6. $4 + 16 = \underline{\quad}$ So I know 1. 2. 3.</p>

Solve the calculations with the expanded and show the 3 other calculations that you can deduce

Hardest	Hardest	Herculean	Herculean
<p>1. $18 + 12 = \underline{\quad}$ So I know :</p> <p>1. 2. 3.</p> <p>2. $14 + 15 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p> <p>3. $13 + 17 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p>	<p>1. $24 + 32 = \underline{\quad}$ So I know :</p> <p>1. 2. 3.</p> <p>2. $46 + 35 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p> <p>3. $53 + 24 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p>	<p>1. $132 + 314 = \underline{\quad}$ So I know :</p> <p>1. 2. 3.</p> <p>2. $146 + 135 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p> <p>3. $153 + 241 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p>	<p>4. $262 + 144 = \underline{\quad}$ So I know :</p> <p>1. 2. 3.</p> <p>5. $237 + 455 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p> <p>6. $283 + 212 = \underline{\quad}$ So I know</p> <p>1. 2. 3.</p>

Challenge: Can you use a bar model to find a the missing numbers?

Can you show the “parts” and “whole”

1. $24 + \underline{\quad} = 32$

2. $26 + \underline{\quad} = 41 =$

3. $\underline{\quad} - 14 = 12$