

Preparation Tasks

Preparation Kit 2025



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Dartboard Challenges

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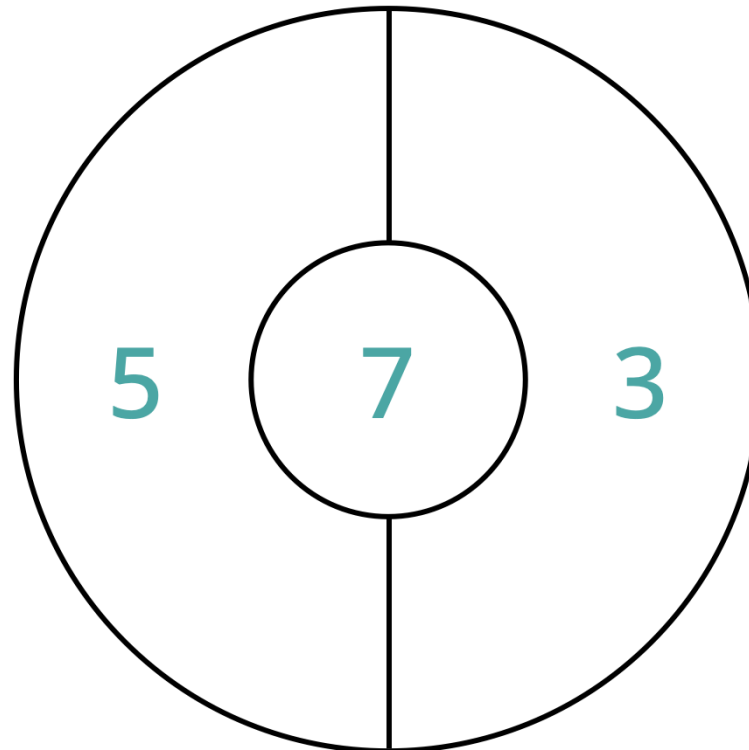
Preparation Task #1

Dartboard Challenges



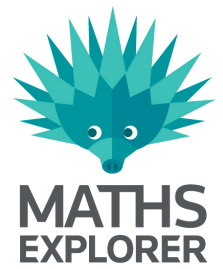
Rebekah and Sung are working together to solve a problem.

In this problem, 3 darts will land somewhere on the dartboard and earn points.



Preparation Task #1

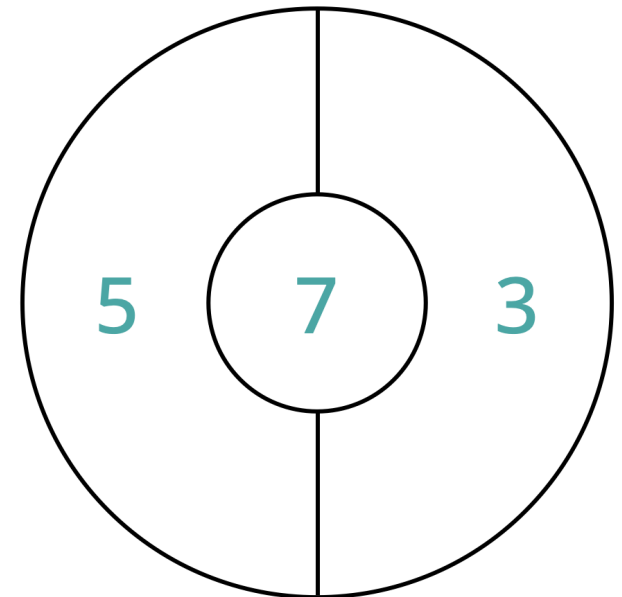
Dartboard Challenges



Their teacher wrote some possible scores up on the whiteboard:

17 11 23 9 14 19

Right away, Sung said, 'There's **no way** someone could score **14**.'



Preparation Task #1

Dartboard Challenges



It's time to:

- Think
- Explain
- Find
- Prove
- List

Preparation Task #1

Dartboard Challenges



It's time to:

- Think
- Explain
- Find
- Prove
- List

Work with a partner to complete the tasks on your activity sheet.

Get ready for a class discussion where we will share and listen to ideas.

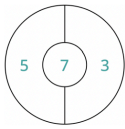
Preparation Task #1
Dart Board Challenges

Names: _____

Rebekah and Sung are working together to solve a problem.
In this problem, 3 darts will land somewhere on the board and earn points.
Their teacher wrote some possible scores up on the whiteboard:

17 11 23 9 14 19

Right away, Sung said, 'There's **no way** someone could score 14.'



Think about the 3 numbers on the dart board.
Explain how Sung knew right away that 14 is an impossible score.

Find the other score in the list that is not possible.
Prove that there is no way to get that score.

Make a list of all scores that are possible when 3 darts land on the dartboard.
You might like to organise them from the **lowest** to **highest** score.

Find numbers that can be scored in more than one way.

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Preparation Task #1

Dartboard Challenges



Who can **explain** how Sung knew right away that 14 is an impossible score?

Who **found** the other score in the list that is impossible to get?

Who can **prove** that this score is not possible?

Who can **list** all possible scores?

Who can **identify** scores that you can get in more than one way?

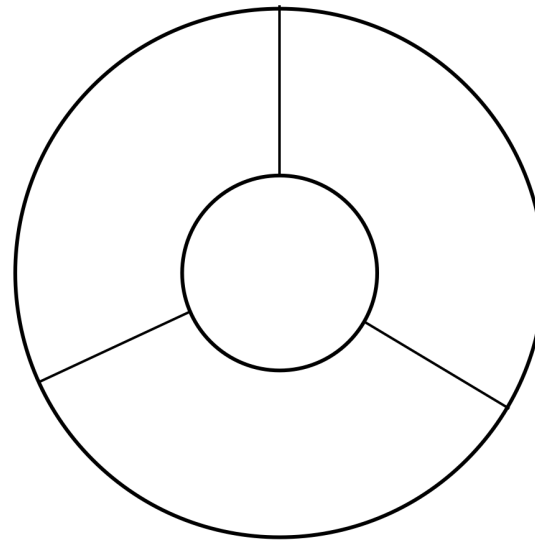
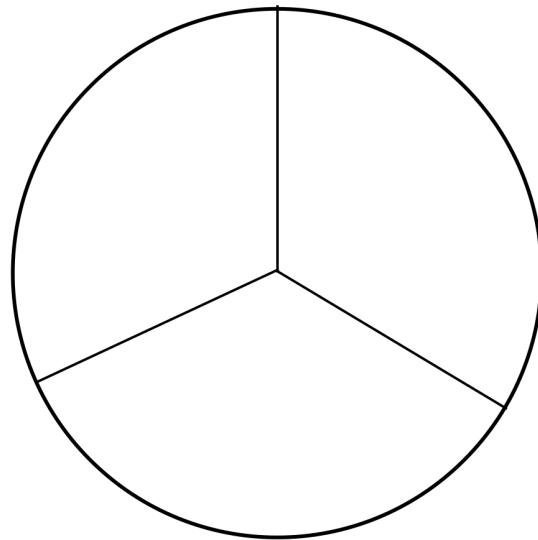
Preparation Task #2

Dartboard Challenges



It's time to:

- **Design**



Preparation Task #2

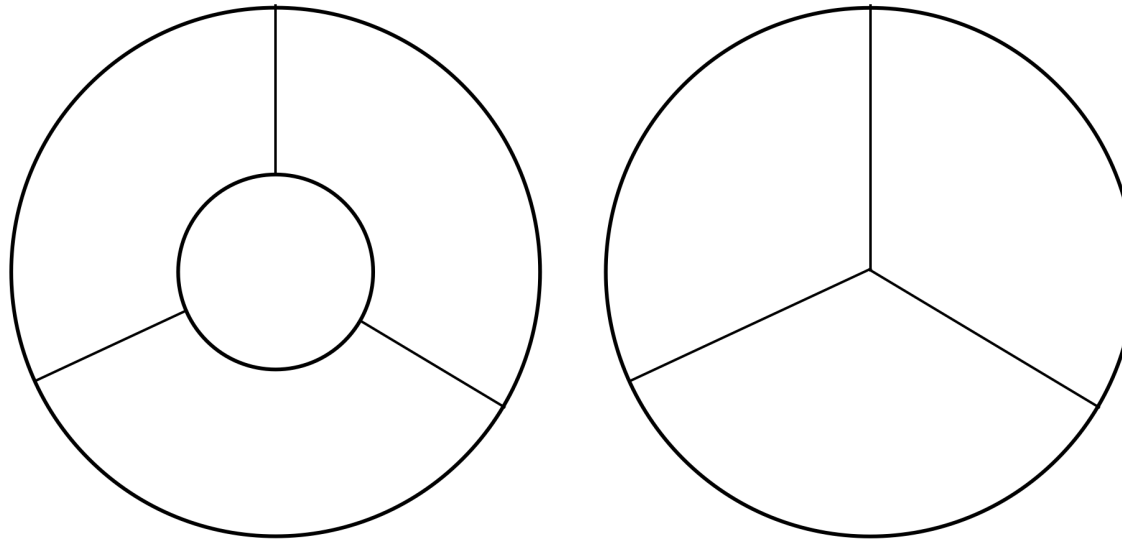
Dartboard Challenges



It's time to:

- **Design**

Work with a partner to design dartboards where it is possible to score **9**, **14** and **21** with **3 darts**.



The first dartboard gives you 4 regions for the 3 darts to land.

The second gives you only 3 regions for the 3 darts to land.

Preparation Task #2

Dartboard Challenges



There is a **Design** page where you can try lots of different combinations and ideas.

There is a **Results** page where you can show the different dartboard that you have designed.

Preparation Task #2
Dartboard Design

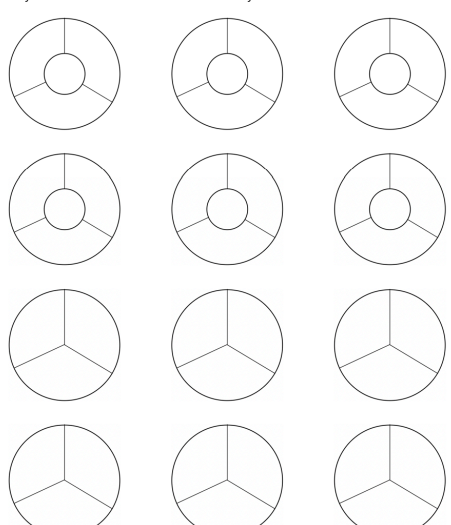
Names: _____

Work with a partner to design dartboards where it is possible to score **9, 14 and 21** with **3 darts**. Experiment using these blank dartboards below.

Try lots of different combinations and ideas. The first type of dartboard gives you 4 regions to use with 3 darts.

The second type only has 3 regions that you can use to score the totals with 3 darts.

Record your solutions on the Dartboard Results activity sheet.



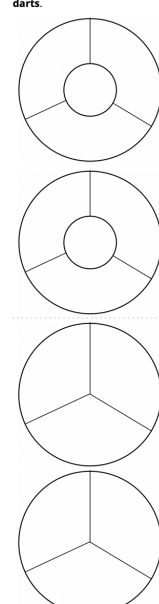
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Preparation Task #2
Dartboard Results

Names: _____

Show the different dart boards you have designed where it is possible to score **9, 14 and 21** with **3 darts**.



How to score **9**: _____ List all other possible scores: _____

How to score **14**: _____

How to score **21**: _____

How to score **9**: _____ List all other possible scores: _____

How to score **14**: _____

How to score **21**: _____

How to score **9**: _____ List all other possible scores: _____

How to score **14**: _____

How to score **21**: _____

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Preparation Task #3

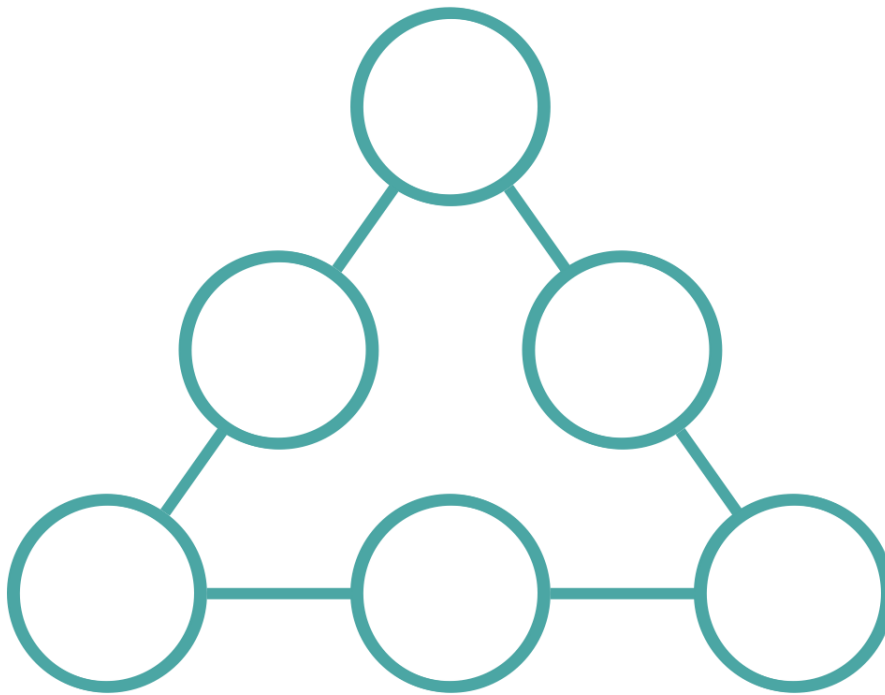
Triangle Challenges



Tamra and Leon are working together to solve a problem.

They need to put numbers into this triangle so that each side **adds up** to **12**.

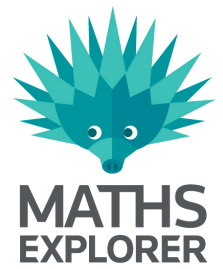
They must use the numbers 1, 2, 3, 4, 5 and 6.



1	2
3	4
5	6

Preparation Task #3

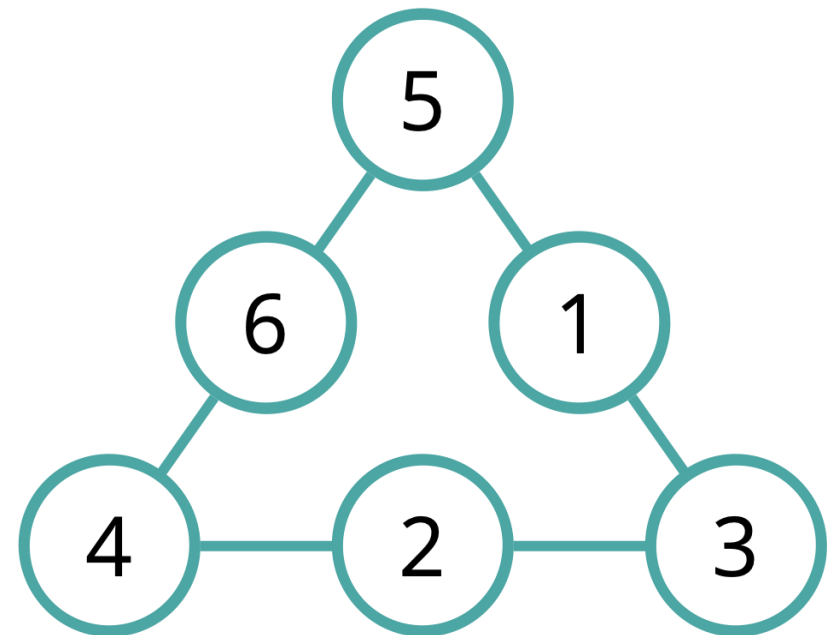
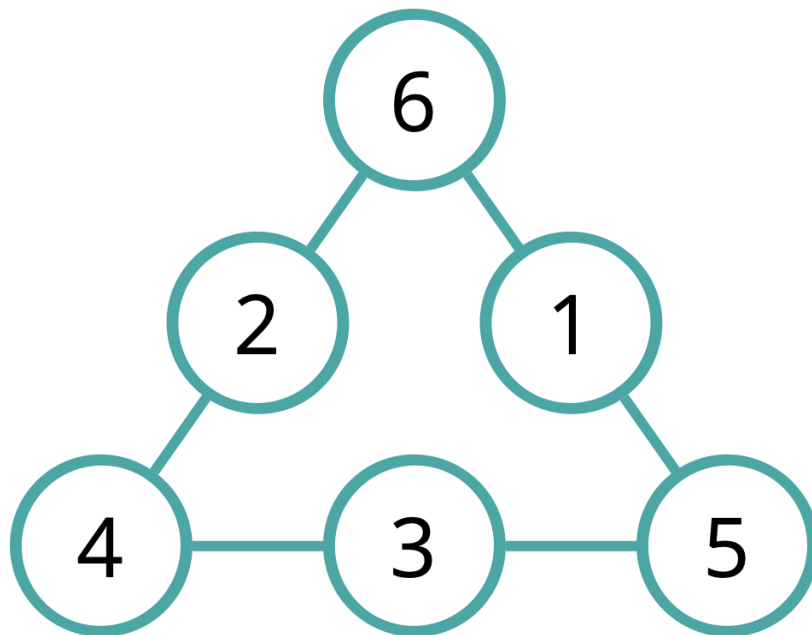
Triangle Challenges



Here are two triangles Tamra and Leon have made.

Chat with your partner and work out which triangle is **incorrect**.

Remember - the sides must add up to **12**.



Preparation Task #3

Triangle Challenges

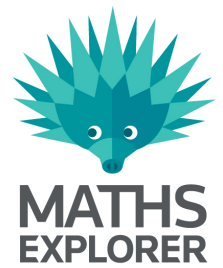


It's time to:

- **Explore**
- **Find**

Preparation Task #3

Triangle Challenges



It's time to:

- Explore
- Find

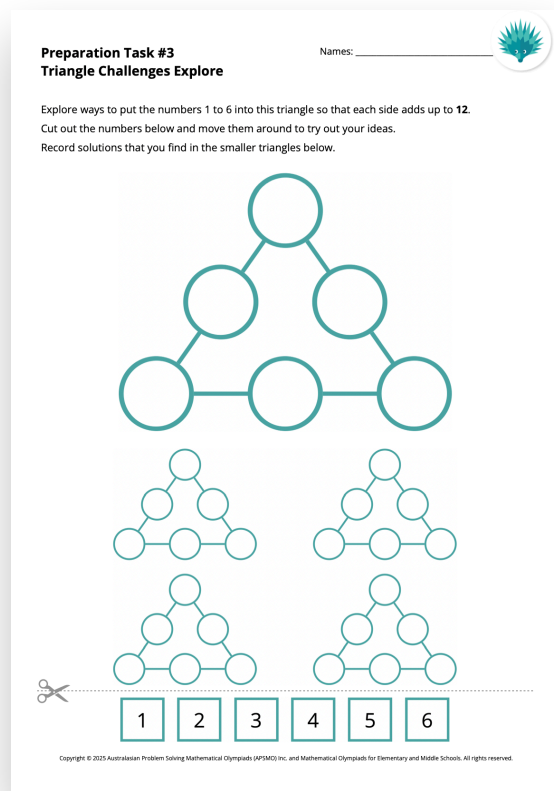
Cut out the numbers on the bottom of your activity sheet.

Place them in the triangle, and find solutions where all sides add up to **12**.

Write your solutions in the smaller triangles.

There is a **Challenge!**

When you are ready, there is a second sheet with new challenges to try.



Preparation Task #4

Triangle Challenges



It's time to:

- Discuss
- Explain

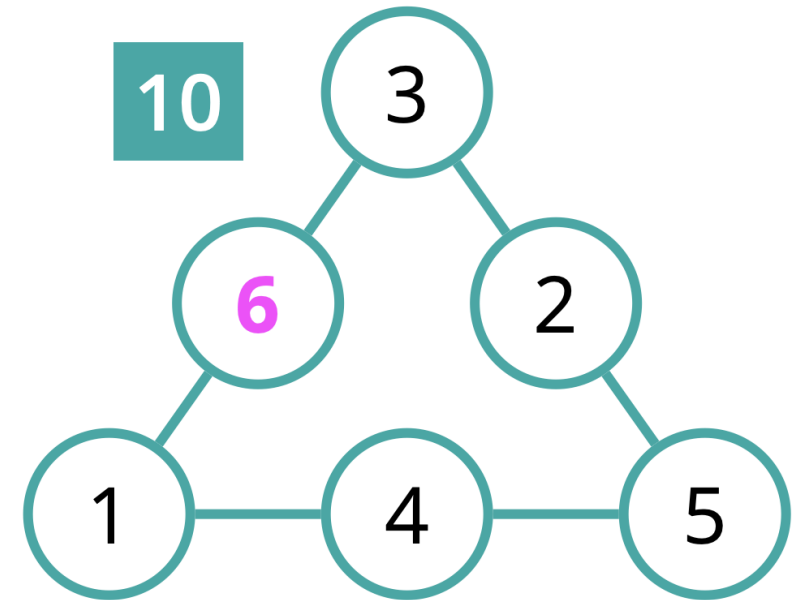
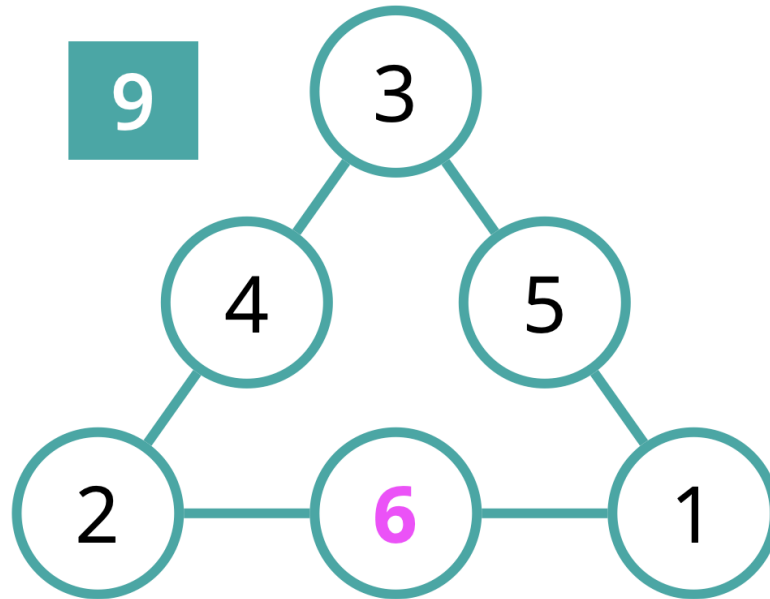
Preparation Task #4

Triangle Challenges



It's time to:

- Discuss
- Explain



6 **can't** be placed in a corner when a triangle's sides add up to 9 or 10.

However...

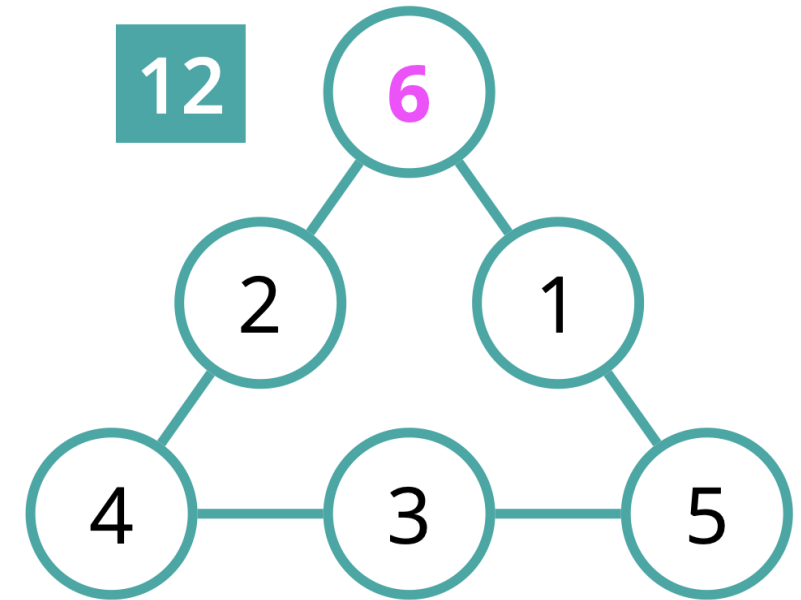
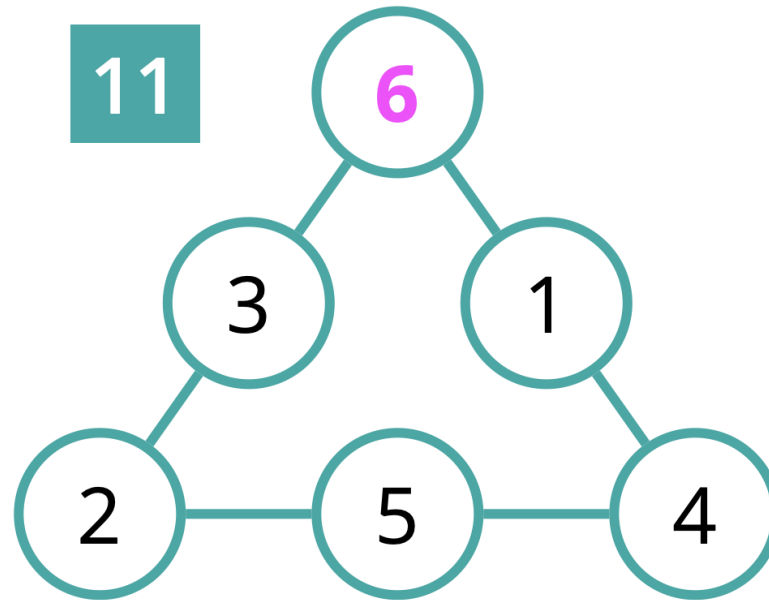
Preparation Task #4

Triangle Challenges



It's time to:

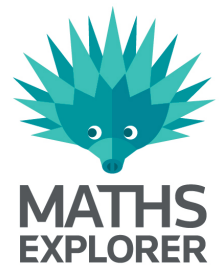
- Discuss
- Explain



6 **can** be placed in a corner when a triangle's sides add up to 11 or 12.

Preparation Task #4

Triangle Challenges



With your partner, **discuss** and **explain** why it is **impossible** for 6 to be in a corner when the side total is 9 or 10.

And then **discuss** and **explain** how it is **possible** for 6 to be in a corner when the side total is 11 or 12.

Preparation Task #4
Triangle Challenges Discuss and Explain

Names: _____

The four triangles shown are:

- Triangle 1 (Side total 9):** Top corner is 3. Left side has 4 and 2. Right side has 5 and 1. Bottom side has 6.
- Triangle 2 (Side total 10):** Top corner is 3. Left side has 6 and 1. Right side has 2 and 5. Bottom side has 4.
- Triangle 3 (Side total 11):** Top corner is 6. Left side has 3 and 2. Right side has 1 and 4. Bottom side has 5.
- Triangle 4 (Side total 12):** Top corner is 6. Left side has 2 and 4. Right side has 1 and 5. Bottom side has 3.

6 can't be placed in a corner when a triangle sides add up to 9 or 10.
6 can be placed in a corner when a triangle sides add up to 11 or 12.
Discuss and explain why it is impossible for 6 to be in a corner when the side total is 9 or 10.
Then, discuss and explain why it is possible for 6 to be in a corner when the side total is 11 or 12.

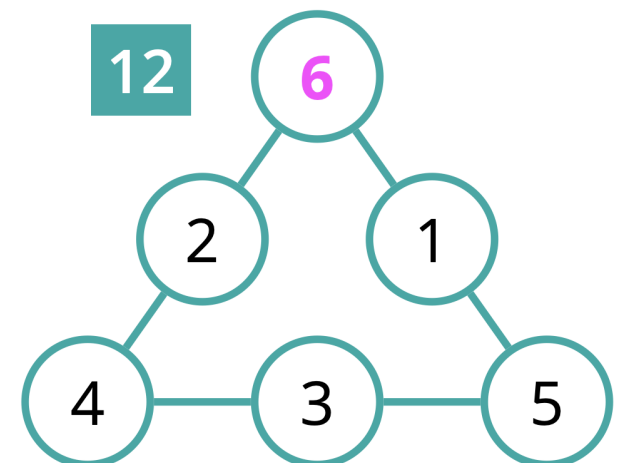
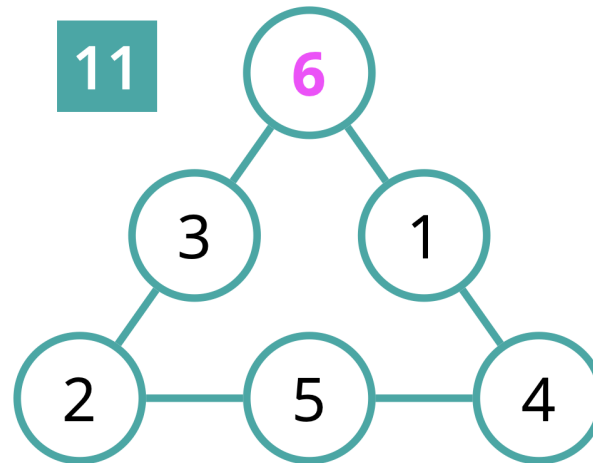
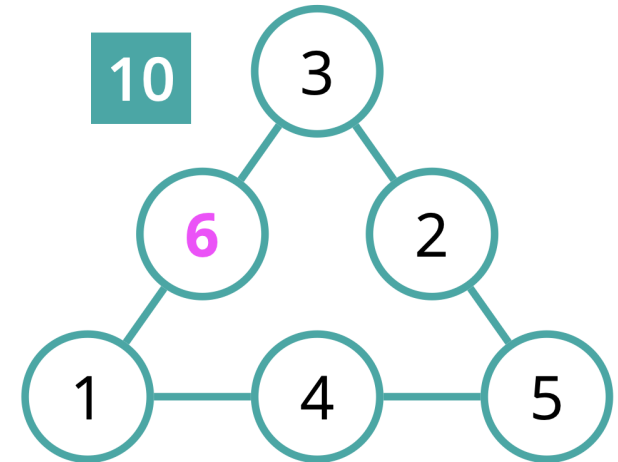
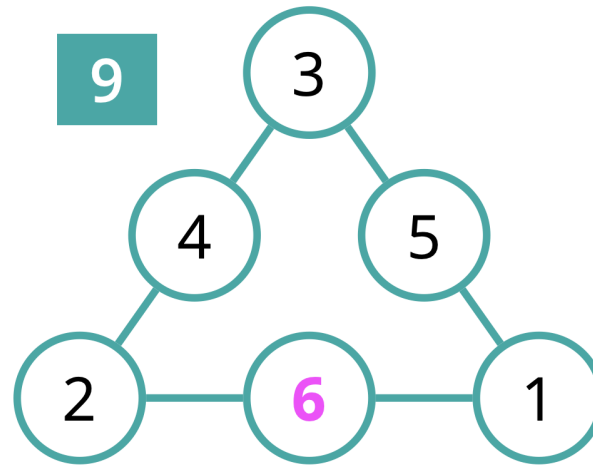
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Preparation Task #4

Triangle Challenges



Who can **explain** why 6 can be in the corner when the side total is 11 or 12, but not 9 or 10?



Preparation Task #4


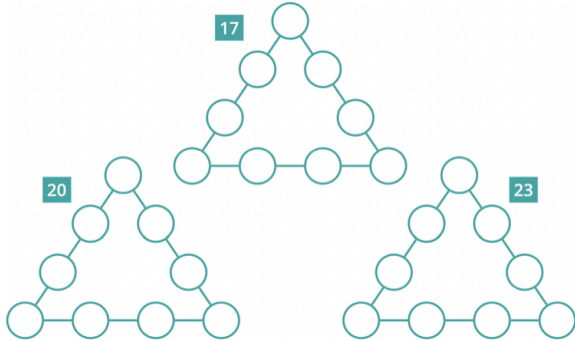
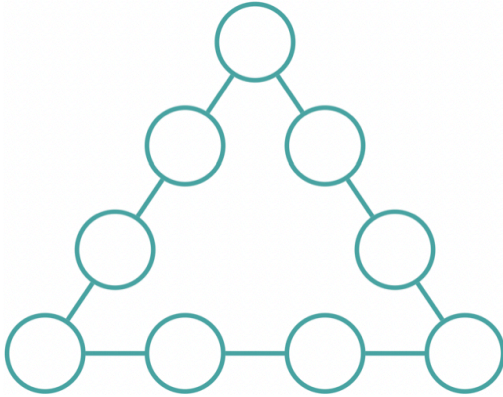
Triangle Challenges Extension



Preparation Task #4 Names: _____

Triangle Challenges Extension

Investigate placing the numbers 1 - 9 in this triangle so that the sides add up to **17**, **20** and **23**.



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