Teacher's Guide for the Preparation Tasks

This year, APSMO is introducing new activities to support students in exploring maths through problem solving.

These tasks focus on strategies and experiences that assist students in building familiarity with mathematical concepts and support collaboration and communication during maths lessons. They are also designed to help teachers tailor activities for high potential and gifted students. As such, not every Preparation Task is suitable for every student.

In this Kit, there are 4 Preparation Tasks.

Each task requires 2 resources to be used together:

- Preparation Task Slides to display on a screen and
- Accompanying student activity sheets.

This allows teachers to guide their class through the steps of each task tasks.

The activity sheets are included in this document, starting on Page 12.

The Preparation Task Slides are in a separate PDF, ready to download in the portal.

For example, Preparation Task #2 includes 3 slides and 2 activity sheets.

Preparation Task #2 Databoard Challenges Its time to: • Design		Preparation Task #2 Darboard Challenges Its time to: • Desig Work with a partner to design darboards and 20 with 3 darts.	where it is possible to score 14, 16	Preparation Task #2 Dartboard Challenges The sol of a flerent combinations and ideas.	There is a Results page where you can show the different clariboard that you have designed.
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As previously noted, teachers can select with discretion which tasks they select to complete with their whole class, and put some more challenging activities aside for smaller groups of children to complete collaboratively.

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 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 new right away that 14 is an impossible score.

Find the other score in the list that is impossible to get. **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 scores that you can get in more than one way.



Preparation Task #2 Dartboard Design

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

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



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Names: _____

Preparation Task Solutions

Dartboard Challenges:

Preparation Task #1

- Sung knew that 3 odd numbers must add up to an odd number. 14 is an impossible score.
- The other score in the list that is impossible is 23. The highest score with 3 darts is 7 + 7 + 7 = 21.
- With 3 darts you can score 9, 11, 13, 15, 17, 19 and 21.
- Some examples of scores that you can get in more than one way include **15**: 3 + 5 + 7 and 5 + 5 + 5, **17**: 3 + 7 + 7 and 5 + 5 + 7. There are more.

Preparation Task #2

