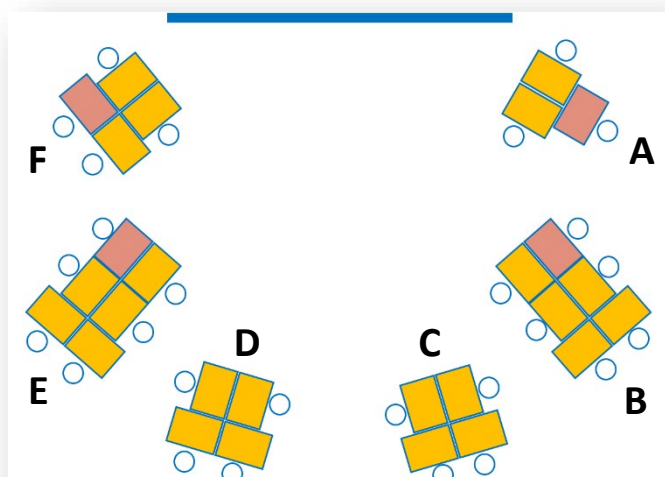


Basic lesson structure for all Junior Primary challenging tasks:



Basic room arrangement

Groups around the outside, with the centre area clear to work on the floor. No one with their back to the board. The four pink desks represents separating students who tend to distract each other. You can add an additional 2 desks to each of groups C and D if needed.

Lesson structure with rotations

Basic idea: Half with you, while the other half complete short rotation tasks.

- Groups A, C and E work on challenging task as one group on the floor. You lead this group as per the instructions below. This should take 20-30 minutes.
- Groups B, D and F complete 3 short tasks, which you swap over whenever they finish the tasks, become bored or start interrupting. If you have an assistant, they supervise these groups. Note: the students do not move, the tasks are placed back in a box which you rotate.

Your group:

Remember: have the first extension question ready

1. **3-5 minutes:** Introduce the problem and have a first try. Provide physical manipulatives as appropriate. Your job is to observe answers and look for common misconceptions. No extension yet.
2. **5-10 minutes:** Come back together as a whole group. Use the questioning provided to evaluate common incorrect answers, focusing on the students who had that answer. Aim to put those students into cognitive conflict – where they feel uncomfortable with their idea – rather than leading them to the correct answer.
3. **10-15 minutes:** Separate students to provide differentiation.
 - a. The group while is right/close should compare and prove their answers, then use the extension question (see lesson plan, or skip to the third lesson in the sequence if needed).
 - b. The group who are ready to try a second time can work through the original problem with a friend. Provide guidance as needed, then the extension when they are ready.
 - c. The students who need more help should work with you. Provide extra questioning, adapt the numbers to be easier to work with, provide enabling prompts or additional explanations as you think are necessary.
4. **Next lesson prior to beginning next task:**
 - a. Begin with an editing time for students to change anything that they want to. This can be done individually, or in pairs.
 - b. Choose a student who has used a good strategy to explain how they successfully solved the problem. Note: if there are not strategies that you want students to use, then skip this step.
 - c. Using their explanation as a stimulus, reexplain and explicitly teach the strategy. Show the steps on the board.

- d. If there is a second strategy that you want to teach, go ahead. Show both strategies side by side, using the same numbers to decrease cognitive load.
- e. Have students pair up and compare/analyse both strategies – what is the same about both? What are the essential mathematical steps?
- f. Have students copy the example, then practise the steps with a similar question.

Rotation groups:

Choose fluency-based tasks that are fast, fun, take about five minutes and involve no fighting.

We suggest using the same or very similar tasks each week to cut down on instruction and interruption time. We also suggest teaching students a few of the games in the first week or so of school and practising listening out for cues (e.g., bell means “get ready to listen”, 2nd bell means put the tasks back in the box and cross your arms, longer ring means the “captain” moves the activity on to the next group).

At the start, make sure that you have at least 2 number tasks of the 3 activities.

Here are some that we have found work well:

- **Number matching cards:** match them up, put them in order, play concentration or go fish. Note: snap is fun but can lead to fighting. [Check out our cards here](#) (includes dominoes).
- **Dominoes:** match the same number, match the number that adds to 10...
- **Partitioning games:** How many of a given amount are hiding under the bowl? Draw them. How many ways to make 12? Toss some double sided counters and draw. Use dice to make pairs that add to a sum. Use cards to make pairs that add to a sum. Make a group with ____ fingers or feet. Other [partitioning games are found here](#).
- **Representing numbers:** complete a laminated placemat with different ways to show an amount (collect, draw, digit, word...). Download some [templates here](#).
- **Order and compare:** use zip lock bags with blocks to order, compare, find one bigger or smaller...
- **Hundreds board jigsaw puzzle:** see the [article and template here](#).
- **Board games:** roll numbers and move around a board. Roll two numbers and decide whether to move forwards or backwards by each of the numbers (e.g. snakes and ladders board).
- **Dice games:** roll 4 numbers. Using any operation and any/all of the numbers try to get as close as possible to a given amount.
- **Make ten card game:** [see this article](#). This is the best game by far.

You can find more [Fluency, mental maths and other games here](#).