

Teacher's Guide: Addition

Purpose

The purpose of this playlist is:

- for pupils to become familiar with different calculation strategies for addition, including sequential, partitioning and compensation strategies;
- for pupils to try out different strategies and become aware of which strategies are most appropriate in different situations;
- for pupils to explain different addition strategies to others.

Preparation and materials

The pupils will need:

- paper for making addition flip-flaps;
- maths exercise books or other paper for drawings and calculations;
- centicubes;
- Post-it notes or small pieces of paper for writing addition calculations on;
- pencils or pens;
- optional markers or crayons for decoration;
- tablets for making recordings.

Process

This playlist contains seven games:

- Addition (Presentation)
- Number Line and Rounding (Presentation)
- Add by Using Partitioning (Presentation)
- Find the Right Answer (Memory)
- Addition Quiz (Danger in the Jungle)
- Rounding Quiz (BuzzIt)
- Round and Sort. (SuperSorter)

The game *Addition* is intended as an open-ended presentation in which pupils are introduced to everyday problems that they must try to solve without being given a particular method in advance. It is a good idea to have paper, pencils and centicubes ready for the pupils to use when they need to find solutions to the problems. You may want to give them a few minutes to work on the problems

in small groups. Tell them that it is important to show how they have solved the problems. They can draw and/or write explanations in their exercise books. Finally, discuss together as a class how the pupils solved the problems and look at the different methods they used.

Number Line and Rounding and *Add by Using Partitioning* introduce different methods for addition. Begin the lesson by watching the introduction together as a class. Then have the pupils work in small groups to try out the method themselves. Write calculations on the board that are appropriate for the pupils' level, or let the pupils create calculations for each other. Finish with a class discussion.

Work through the remaining games and workshops in rotation or individually.

Workshop 1

Play the games:

- Find the Right Answer
- Addition Quiz
- Rounding Quiz
- Round and Sort.

Workshop 2

Quiz and Swap

Each pupil needs a small piece of paper or a Post-it note.

Ask the pupils to write an addition calculation on their paper using two numbers between 10 and 99.

The pupils stand up and move around the classroom until the teacher gives a signal. Everyone stops and finds a partner nearby. They take turns showing their calculation to their partner and working out the answer to their partner's calculation. Remind the pupils that they should explain their thinking when solving the calculation. When the teacher gives the signal, the pupils swap calculations with their partner and move around the classroom again. Repeat the activity until the teacher stops it.

Workshop 3

Flip-flaps

Each pupil must make an addition flip-flap using a piece of white paper. If they need help making one, they can use the instructions at the bottom of the document. The pupils write addition calculations on their flip-flaps, using numbers between 10 and 99. If necessary, let them decorate their flip-flaps.

When they have finished their flip-flaps, they sit together in small groups of two or three students.

The pupils help each other solve the calculations on the flip-flaps.

Workshop 4

Explain and Record

Put the pupils into small groups of two or three. Give each group an addition calculation that is appropriate for their level. Some pupils may find a calculation involving two two-digit numbers sufficiently challenging, while others may benefit from working with three-digit numbers or adding three numbers together. For example:

- $34 + 55$
- $47 + 38$
- $64 + 73$
- $164 + 281$
- $45 + 51 + 37$.

Ask the pupils to make a short recording in which they explain how to solve the calculations. Agree with the pupils in advance how they will make the recordings and where they will save them.

They should imagine that they are explaining the method to a younger pupil who has not yet learned how to add. They can use centicubes or drawings to explain their method.

Workshop 5

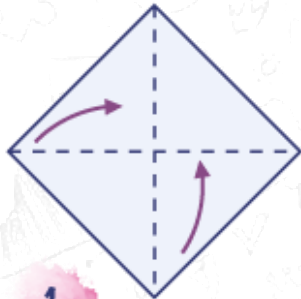
Maths Stories

Divide the pupils into small groups of two or three. Give each group paper and pencils. Ask them to create a short maths story in which two or three numbers are added together. They should draw and write their maths story on the paper. When they have finished, they swap their story with another group. The pupils have 10–15 minutes to solve each other's maths stories. When they have finished, they sit down with the group they swapped with and discuss the solution methods they used.

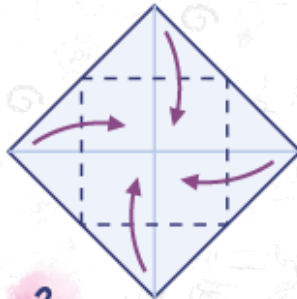
Evaluation

Discuss together as a class. For example, discuss:

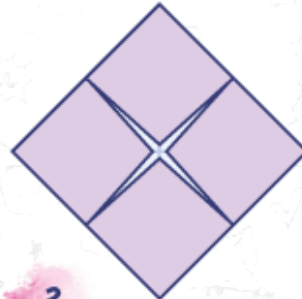
- What different methods can we use to add multi-digit numbers?
- Are some methods more appropriate than others for certain types of numbers?
- Are some methods generally more efficient than others?
- How did you find working on the tasks in groups?
- What tasks did you find most interesting to work on? Why?



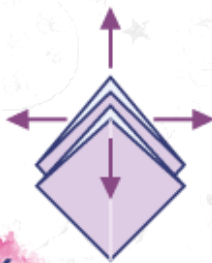
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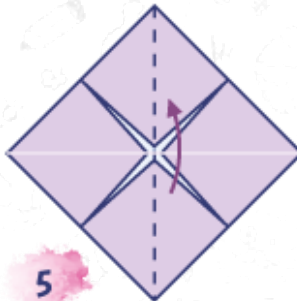
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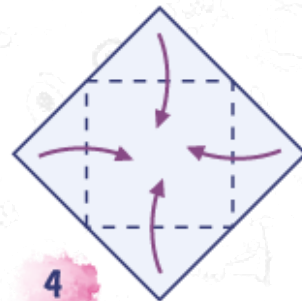
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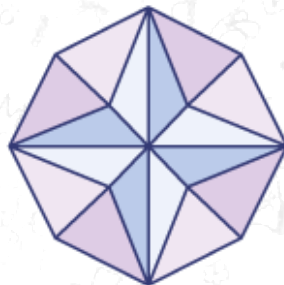
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