

# Addition and Subtraction

**TARGET AGE:** From age 7 upwards

**ACTIVITIES TO ASSIGN:**

1. Understand exact division
2. Understand exact division and divisibility

## Set up at the start of the lesson

### On Mangahigh...

- Ensure Mangahigh activities have been assigned with the timer 'off', [here's how](#)
- Set classroom mode so students can only access the assigned activity, [here's how](#)
- Get students to log in to their MH accounts, you can find their login details by logging into your Mangahigh account and clicking [here](#).

### Materials/Equipment

- Ensure every student has paper and pen for rough working
- Ideally, each student should have their own device and Mangahigh student login, but sharing 1 device between 2-3 students can also work



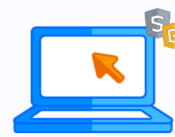
Introduction



Student play activity



Class discussion



Student re-play activity



Wrap up

**Teacher led: Introduction** (7-10 minutes)

## Option 1

- Play 4 or 5 questions from the activity "**Represent addition and subtraction**" with the whole class on your teacher board by accessing it from your teacher account, [here's how](#).
- Ensure you start at the EASY level of questions and that the first 3 questions are answered correctly so that the students then see 1 or 2 of the MEDIUM level questions. Don't close the activity so that you can continue with it for the class discussion.

## Option 2

- Mangahigh has provided a 6 minute video highlighting how to answer some of the question types from the activity: <https://www.loom.com/share/510f244502004ab6a01cbef11f095610>
- Either play this video to the whole class or share the link with students so they can watch it individually.

**Student play - part 1** (12-15 minutes)

- Students start work on the activity "**Represent addition and subtraction**".
- Move around the class helping with individual questions.
- Each attempt is 10 questions and should take about 3 minutes.
- Most students need 3 attempts to achieve a BRONZE medal to demonstrate a secure understanding. Encourage students to make 3 attempts before you give substantial help.
- Encourage students to use the question HINTS and to check the full solutions for their incorrect answers. They can do this after each full attempt of 10 questions.
- Encourage students who achieve a BRONZE medal to go for SILVER or GOLD, these medals indicate a deep conceptual understanding.
- If you have a student who achieves a GOLD medal very quickly, then place them with another student who is struggling to encourage peer mentoring.

### Teacher led: Class discussion (7-10 minutes)

If the activity was assigned *WITHOUT* a timer, simply ask students to stop working.

If the activity was assigned *WITH* a timer, students can click on *HINT* to pause the timer.

#### Option 1

- Play 3 or 4 more questions with the class from the activity “**Represent addition and subtraction**” focusing on the HARD questions.

#### Option 2

- Mangahigh has provided a 4 minute video highlighting how to answer some of the HARD question types from the activity: <https://www.loom.com/share/51228d0c06074b2c979e73759d5ab38a>
- Either play this video to the whole class or share the link with students so they can watch it individually.

#### Key discussion questions

- What have you learned?
- What would you do differently now?
- What is still difficult?




#### Harder activity

- Tell students that some of them may be ready to try the harder activity “**Learn to add and subtract up to 20**”
- Play 2 or 3 EASY questions with the class from the activity “**Learn to add and subtract up to 20**”.

## Student play - part 2 (7-10 minutes)

### Instructions for students based on medal achieved

Tell the whole class that:

	<p>Those who haven't achieved a medal yet should continue with the 1st activity</p>
	<p>Those who have BRONZE or SILVER on the 1st activity can either go for a higher medal, or try the 2nd activity.</p>
	<p>Those who have GOLD on the 1st activity should start on the 2nd activity.</p>

### Monitoring student progress

- Once students commence working, check the results for the 1st activity, [here's how](#).
- Help anyone who has made 3 or more attempts on the 1st activity, but has not achieved a medal.

## Wrapping up (7-10 minutes)

### Exit questions

- Share 3 questions with your students on your teacher board by clicking [here](#) and staying on page 1.
- Explain that they have 4-5 minutes to try 1, 2 or all 3 of them in any order on rough paper.
- Move around the class discussing their approaches.
- Then spend 3-5 minutes going through the answers to the questions.
  - Use pages 2, 4, 6 to annotate with student suggestions.
  - Use pages 3, 5, 7 to show students a solution if needed.