

FOR THE
IB PYP

Growth Mindset

Every child a learner

Teaching for Success

Katherine Muncaster
with Shirley Clarke



 **HODDER**
EDUCATION

CHAPTER 7

Lessons for 10–11-year-olds

Lesson	Focus	IB Learner Profile	Page
1 'Don't say ... Say ...'	The impact of words and phrases on mindsets; creating effective phrases for learning feedback	<ul style="list-style-type: none"> • Communicators – we express ourselves confidently and we collaborate effectively. • Reflective – we work to understand our strengths and weaknesses. • Thinkers – we use critical and creative thinking skills. 	213
2 Diamond minds	Identifying what is important for them as an individual learner; identifying barriers to their learning and how they might overcome them using the diamond nine array	<ul style="list-style-type: none"> • Communicators – we express ourselves confidently and we collaborate effectively. • Reflective – we work to understand our strengths and weaknesses. • Thinkers – we use critical and creative thinking skills. 	219
3 Barriers to learning	Identifying and overcoming barriers to learning using a rock image	<ul style="list-style-type: none"> • Reflective – we work to understand our strengths and weaknesses. • Thinkers – we use critical and creative thinking skills. • Risk-takers – we are resourceful and resilient in the face of challenges. 	225
4 Brain vs. calculator	Discussing whether a calculator is better than a brain; justifying their opinions and reflecting on the opinions of others	<ul style="list-style-type: none"> • Communicators – we express ourselves confidently and we collaborate effectively. • Knowledgeable – we develop and use conceptual understanding. • Open-minded – we seek and evaluate a range of points of view. 	230
5 Mathematical mistakes	Describing how mistakes can help us learn; identifying how we should respond to them	<ul style="list-style-type: none"> • Risk-takers – we are resourceful and resilient in the face of challenges. • Communicators – we express ourselves confidently and we collaborate effectively. • Knowledgeable – we develop and use conceptual understanding. 	235
6 Learning pathways	Defining learning; creating a way of explaining learning to younger children	<ul style="list-style-type: none"> • Communicators – we express ourselves confidently and we collaborate effectively. • Reflective – we work to understand our strengths and weaknesses. • Thinkers – we use critical and creative thinking skills. 	239

Overview

Mathematical mistakes are a key focus in these lessons and this links closely to classroom learning. Students are encouraged to think about how they respond to these mistakes. They are also asked to reflect on the role of parents and the language used to encourage people to learn. The effective characteristics of a learner are revisited and students are encouraged to reflect on those that enable them to be a learner. Students are also given the opportunity to create their own way of illustrating learning, which could be used to explain learning to younger students.

SAMPLE

1 'Don't say ... Say ...'

Learning objectives	Resources
<ul style="list-style-type: none"> To discuss the effects that different types of feedback can have To create effective phrases for learning feedback 	<ul style="list-style-type: none"> YouTube video 'Clever girl' at www.youtube.com/watch?v=VAMQs1tjIM4 Feedback grid (see Figure 95)

IB Learner Profile

- Communicators** – we express ourselves confidently and we collaborate effectively.
- Reflective** – we work to understand our strengths and weaknesses.
- Thinkers** – we use critical and creative thinking skills.

Lesson



- 1 Arrange the students so they are sitting with their talk partner and can clearly see the board.

Watch the YouTube video 'Clever girl'. Ask the students to think about:

What did you hear and see in the video?

Why do you think a parent would say 'clever girl/boy' to their child?

Explain to the students that you want them to think about and then to discuss with their talk partner:

Do you think it is a good idea to praise a baby by saying 'Clever girl!' or 'Clever boy!'?

Why do you think that?

Explain that you are interested in their opinions and the reasons why they have those opinions. Remind the students that they might have different opinions but it is important to listen to different viewpoints.

When you feel the students' discussion has reached an appropriate point, ask the students to feed back whether they think it is a good idea and to share their reasons.



- 2 Develop the discussion further by asking the students to think about the following questions:

What does the word 'clever' mean to you?

Should we tell someone they are clever?

Do you like being told you're clever? Why?

Is it good to praise students?

It might be useful to display these key questions on a whiteboard to allow the students to focus their discussions on the key points. Take feedback from the students.



■ 'Don't say ... Say ...'

- 3** Explain that research shows that 'false praise' or excessive praise has a negative effect on learners as it can lead to them needing large amounts of praise as the motivation to do anything, and they can also become extremely reluctant to make mistakes.

Ask the students to talk to their talk partners about alternative ideas:

What should we say instead of 'clever girl/boy' when someone succeeds at something?

Share examples of feedback.

- 4** Ask the students to discuss which of these helps them to be a better learner: **'Fabulous writing!'** OR **'Fabulous writing. You have carefully chosen words to describe the character.'**

During the talk time you should observe and listen to the students' ideas and any misconceptions. A useful strategy is to turn the misconceptions into questions to allow all students to reflect on and discuss them. This allows peer-to-peer support and is extremely powerful.

The following are examples of students' suggestions and ways that you can address them:

Possible misconception	Teacher's response
Intelligent girl	Is that the same as saying 'clever girl'?
Well done!	What are we praising them for? How have they been successful? Be specific! Well done, you have successfully used connectives to extend your sentences.
Great work!	How does this help you to be a better learner?

- 5 Provide each student with a feedback grid (Figure 95). Ask them to create a feedback phrase that promotes a growth mindset for each phrase they have been given. Explain to the students that there are no right or wrong answers, just their ideas.



Name:	Date:
Don't say ...	Say ...
	
Clever boy/girl	
Well done!	
Well done, you finished that work quickly.	
Wow, that was easy work!	

Figure 95 'Don't say ... Say ...' feedback grid

Reflection time – what have we learned?

Look at examples of the students' feedback. Then ask them to work in the two roles of teacher and student, and role-play giving both types of feedback to each other. Initially, you could model this yourself with a student or teaching assistant, especially if your students are unfamiliar with giving feedback to one another.

Ask the students to discuss and reflect on:

How do the different types of feedback make you feel?

Which do you think would be more effective? Why?

Challenge

Give the students the opportunity to review their books (possibly from the previous year) and to reflect on their own learning:

What was the best feedback you had? Why?

What was the worst feedback you had? Why?

Further developments

Create a display of feedback phrases for the students to use when working with a partner.

Create short video clips of students giving effective feedback. These can be used with younger students, shared with parents and given to staff to reflect on.

DOWNLOADABLE RESOURCES

'Don't say ... Say ...' feedback grid template

www.hoddereducation.co.uk/ib-extras

Students' responses

■ Why would a parent say 'clever girl/boy' to their child?

'If you say clever girl, they will want to do it again.'

'They might say it if they do something they don't expect them to do.'

'It's good praise.'

'When they have learned something new.'

'To encourage them.'

■ Is it a good or bad idea to say 'clever girl'?

'It's a good idea because ...'

'It helps them know it's a good thing.'

'We praised my baby sister this morning because she sat up on her own. We wanted her to do it again so we made a fuss.'

'It's a bad idea because ...'

'They may think they are clever when they are older and they could become boastful.'

'They might think they don't need to work.'

'In the story of the Hare and the Tortoise, everyone thought the hare was the fastest and he boasted how he was the best. He became too confident and stopped trying.'

■ What does the word 'clever' mean?

'Smart.'

'You're good at things and intelligent.'

'You know a lot of things.'



Name:	Date:
Don't say ...	Say ...
	
Clever boy/girl	Good try, next time you need to challenge yourself by ... Begin with good try; then change your words as you improve. So you have feedback that shows how you are learning.
Well done!	Well done, you have used ... in your writing. It's a bit empty; maybe try using more meaningful words that say why it was good. Well done on achieving ...
Well done, you finished that work quickly.	Specific information on how to get better. Try saying something more beneficial, rather than encouraging them to rush.
Wow, that was easy work!	That's really good. Do you need something more challenging? You have learned to do this, we will find you a new learning challenge. This encourages them to pick easy work; try to encourage them to challenge themselves.

Figure 96 Example filled-in 'Don't say ... Say ...' feedback grid

2 Diamond minds

Learning objectives	Resources
<ul style="list-style-type: none"> To identify what is important for them as an individual learner To identify barriers to their learning and how they might overcome them 	<ul style="list-style-type: none"> YouTube clip of neurons firing at www.youtube.com/watch?v=t3TaMU_qXMc The brain growing picture (see Figure 97) Blank diamond nine (see Figure 98) Characteristics of being an effective learner cards (see Figure 99)

IB Learner Profile

- Communicators** – we express ourselves confidently and we collaborate effectively.
- Reflective** – we work to understand our strengths and weaknesses.
- Thinkers** – we use critical and creative thinking skills.

Lesson



- 1 Arrange the students so they are sitting with their talk partner and can see the board. Watch the YouTube clip, ensuring that the title of the clip is hidden. Ask the students to discuss with their talk partner what they think they have just watched. Then take feedback and, if necessary, explain that they have just watched the neurons inside the brain firing as they receive and send information during the learning process.
- 2 Develop this further by explaining to the students that, as you learn, the brain makes connections and grows. The brain's capacity increases and it becomes more complex as it learns new things: as if you were adding extra memory to a computer. In this case it was shown as buying extra memory for your brain. The more we learn, the more connections are made. For instance, look at Figure 97.

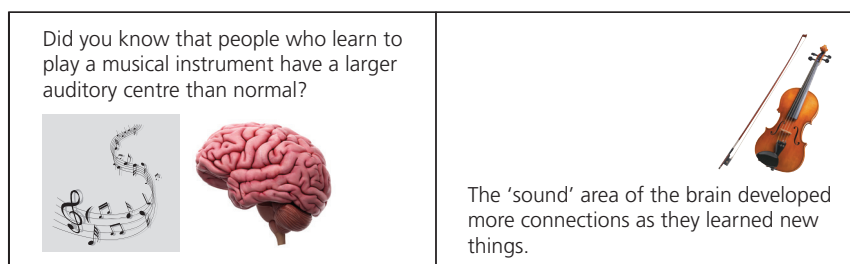


Figure 97 The brain grows with learning



■ Diamond minds

- 3** Share with the students the blank 'diamond nine' as shown in Figure 98, explaining that it is a means of organizing information in order of importance. The most important item should be placed on top and then the next. Some items can be given equal importance and grouped in twos or a three.

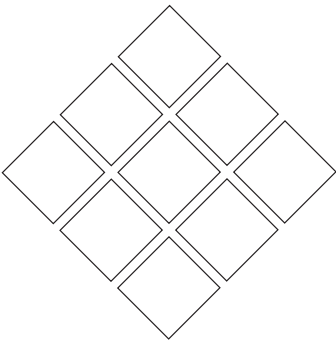


Figure 98 The diamond nine

- 4** Read through the nine potential characteristics of being an effective learner shown in Figure 99. Recap on the meaning of any words that might be unfamiliar.

teacher	feedback	resilience
challenge	effort	knowledge
a quiet classroom	making mistakes	growth mindset

Figure 99 The characteristics of being an effective learner



- 5** The students should now create their own 'diamond nine of learning' using a blank diamond nine and nine characteristics cards. Ask them to arrange the nine characteristics into their own order to show which is the most important for them as an individual to be an effective learner (see Figure 100).

It is helpful if the characteristics have been cut out ready so the students do not think they are in a preconceived order. The students can stick them on to the blank template to help them see the structure of a diamond nine clearly. You could add images to the vocabulary cards to support students' understanding. Explain to the students that there are no right or wrong answers as everyone is a unique learner.

Reflection time – what have we learned?

Once the students have completed the task, ask them to share their diamond nine of learning with their talk partners. To encourage discussion, you could share some questions they can ask each other:

How did you feel about ordering the different aspects? Was it an easy task?

Why have you chosen this aspect as the most important?

Which was the hardest thing to decide?

Were there any elements that you thought were barriers to your learning?

How would you overcome them?

During the discussions you should act as a facilitator, listening to the discussions and collecting ideas to feed back to the whole class.

Ask some of the pairs to feed back on their discussions and how they created their diamond nines. Discuss with the class how the information can be used to help improve teaching and learning in the classroom.

Select a common aspect that the students have identified as important, such as knowledge or the teacher, and ask the students to discuss whether this is the most important factor.

Challenge

Remove the diamond nine template and ask students to again arrange the characteristics in order of importance. The opened-ended nature of this should allow the students creativity and encourage them to justify their opinions.

Ask the students to work in pairs and, between them, to decide which are the most important aspects. Remind them that they will need to negotiate, compromise and persuade.

Ask the students to select an aspect that is a barrier to their learning and represent it pictorially, for example as a rock. They can then identify ways to overcome this barrier as an aide-memoire to learning.

Further developments

Give the students a blank diamond nine and ask them to create their own for the different aspects of being an effective learner, trying to add some characteristics that have not been used in the lesson if possible.

Ask the students:

Is there anything you would want to change or add to the diamond nine?

Why is that an important aspect?

Which one do you think would be the most important for you as a learner?

Create a display board that reinforces the different characteristics of an effective learner and having a growth mindset.

Begin to praise students for their learning using the terminology for an effective learner. Praise the process and effort rather than the outcome.

DOWNLOADABLE RESOURCES

- PowerPoint presentation about the brain growing with learning
- Diamond nine template
- Characteristics of being an effective learner cards
- Video of students discussing what learning is

www.hoddereducation.co.uk/ib-extras

Students' responses

■ What did you see?

'The messages in your brain telling you what to do, for example move your arm.'

'Neurons firing - they are things in your brain that send messages to your body.'

■ What does resilience mean?

'Doing it again and again and never stopping until you succeed.'

'Showing determination, it doesn't necessarily mean you will succeed but you will keep trying.'

■ How did you feel about ordering the characteristics? Was it an easy task?

'It was quite hard because they are all important. They are all things you need.'

'Difficult, as you have to think about learning and what you do. Often when I am learning I don't think about that, I focus on the task.'

■ Which is the most important characteristic?

'Making mistakes – if you make a mistake you can learn from it, you can overcome it.'

'Challenge – if you don't challenge yourself you are not learning.'

'Effort – I think even if you don't do well in a test or can't do something, if you've put effort into what you are doing, you can still be proud.'

■ What are the barriers to learning?

'Quiet classrooms because sometimes you need to talk about learning.'

'Yes, I want to share my thoughts, or listen to others and be inspired.'

■ Can you rearrange the characteristics in a different way to represent your learning?

'As a square, as they are all equally important.'

'In a line, in order of importance.'

'You could arrange them to show how they are connected.'

'As an upside-down triangle, with the most important factor at the bottom and then the others layered on top.'

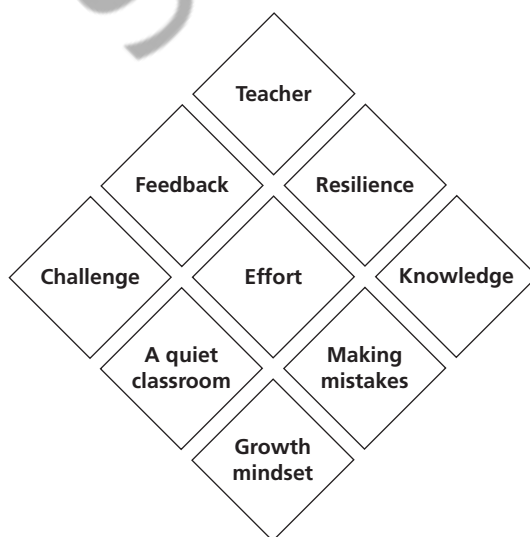


Figure 100 What is important to be an effective learner

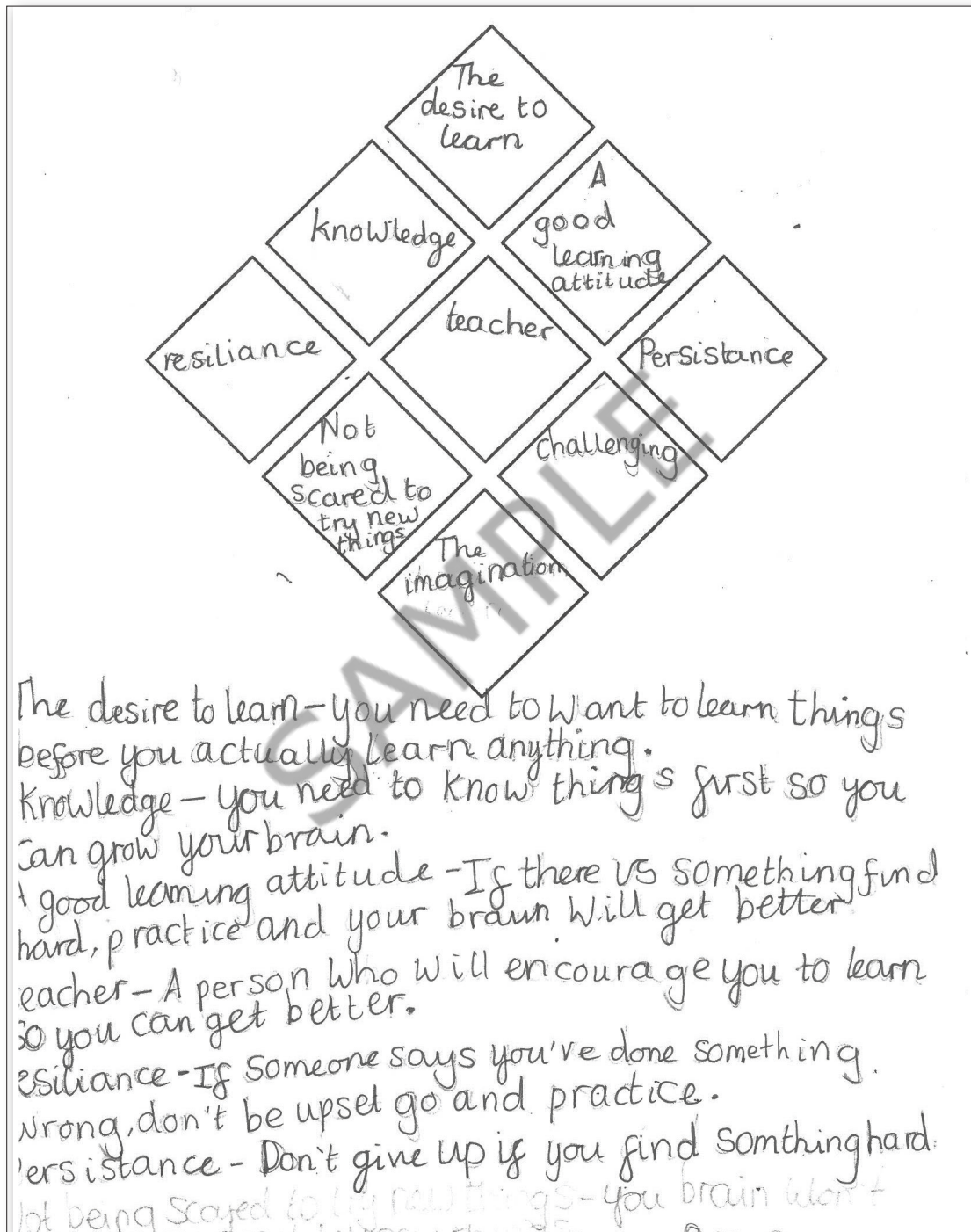


Figure 101 The desire to learn is most important

3 Barriers to learning

Learning objectives	Resources
<ul style="list-style-type: none"> To identify barriers to learning To identify strategies to help students overcome their barriers to learning 	<ul style="list-style-type: none"> A picture of a large rock (see Figure 102) An example of a comic strip (see Figures 104 and 105) Access to tablets or laptops to create a comic strip (see suggestions of apps below)

IB Learner Profile

- Reflective** – we work to understand our strengths and weaknesses.
- Thinkers** – we use critical and creative thinking skills.
- Risk-takers** – we are resourceful and resilient in the face of challenges.

Lesson



- 1 *Seat the students with their talk partners, all with a clear view of the board.*

Together look at the image of a rock in Figure 102, which represents a barrier to a student's learning.

Ask the students to talk with their talk partner and think about:

Why has the rock been chosen to represent a barrier to learning?

What could the rock represent as a barrier for your learning? Why?

How can you overcome barriers to learning?

Take feedback from the students.

Why would you use a rock to represent a barrier to learning?



Figure 102 The rock barrier to learning



- 2 Next ask them to reflect on what might be a personal barrier to their own learning. Probe this further by asking them to think about:

Is the barrier related to a specific subject?

What strategies have you tried to overcome it?

Why do you think it's a barrier?

What other strategies could you try?

Again, take feedback from the students.

- 3 Now ask the students to think about whether the barriers to their learning are **internal** or **external**.

Visible thinking – you could provide the students with an example to highlight the differences. For instance, students often state that other people talking is a barrier to their learning. This is an external barrier and while you can discourage others from talking, you cannot necessarily stop them. An example of an internal barrier could be a student's reluctance to ask for help when they are stuck. They may be reluctant to ask for help, as they are afraid of looking bad in front of their peers.



■ Barriers to my learning

- 4 Explain to the students that they are going to create a comic strip to illustrate a barrier to their learning and ways they can overcome it. You could share a range of examples of students' ideas that they have set in different contexts, including the ones shown in 'Students' responses' on page 233.

The students can record their comic strips on a simple framework (see Figure 103) that they draw first, or they could use an app or website to create them.

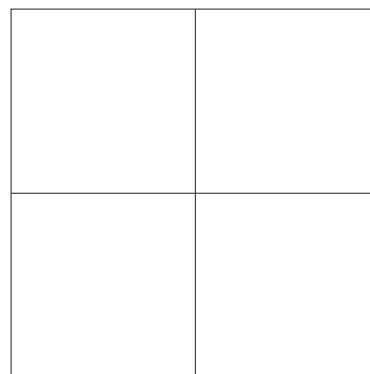


Figure 103 Framework for a comic strip

Possible apps and websites you could use:

- Make Beliefs Comix: www.makebeliefscomix.com/
- Toon Toolkit: available on the iTunes App Store
- Pixton: www.pixton.com/

Reflection time – what have we learned?

Review the students' comic strips and the different strategies they have used to overcome barriers to their learning. Encourage them to use a wide range of strategies by asking the class to discuss what other ways they can suggest to help their friends overcome their individual rocks/their barriers to learning.

Potential suggestions could include:

- Don't give up.
- Ask a partner for help.
- Understand it's part of the learning process.
- Try again.
- Learn a new strategy.
- Revisit your learning.
- Work in a small group to practise.
- Ask a teacher for help.
- Practise an earlier stage.

Challenge

Provide scenarios where the students make mistakes and fail. Then ask them to role-play what they would do. They could be given specific roles such as the teacher, student or friend. Use the context of school for some of the scenarios, but provide other real-life contexts as well.

Further developments

Create a class display of a comic strip featuring a student using a range of strategies to overcome barriers to learning. Include the students' creations.

DOWNLOADABLE RESOURCES

- PowerPoint presentation 'Why would you use a rock to represent a barrier to learning?'
- Framework for a comic strip
- Examples of students' comic strips

www.hoddereducation.co.uk/ib-extras

Students' responses

■ Why would you use a rock to represent a barrier to your learning?

'Because rocks are very hard and you need to challenge yourself to move a rock.'

'Rocks can block pathways and some can be easier to move than others.'

■ In your learning, what barrier to learning does a rock represent? Why?

'A person talking is a rock as it can distract me.'

'Your attitude can be a rock. As if you think you can't do something and don't try, this stops you learning. You're not in the right mindset.'

'If you are worried about making mistakes this can be a rock and a barrier to learning.'



Figure 104 Building confidence

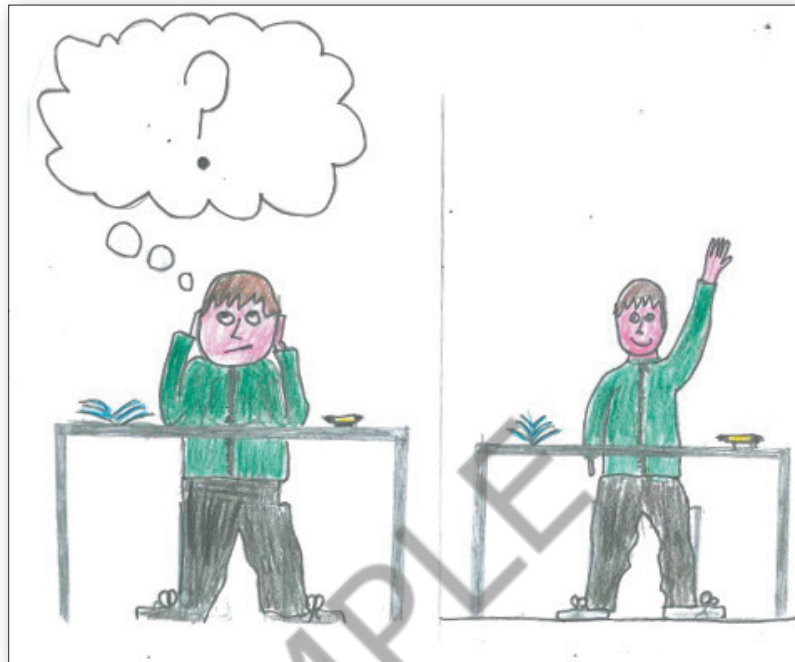


Figure 105 What to do if I don't know the answer

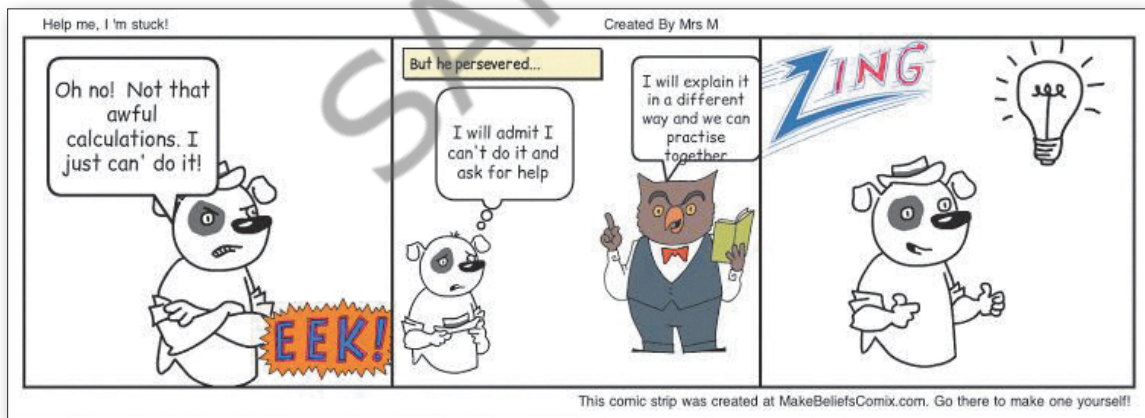


Figure 106 Example of a student's comic strip, www.makebeliefscomix.com/

4 Brain vs. calculator

Learning objectives

- To discuss whether they think a calculator is better than a brain
- To justify their opinions and reflect on the opinions of others

Resources

- Role badges (optional)

IB Learner Profile

- **Communicators** – we express ourselves confidently and we collaborate effectively.
- **Knowledgeable** – we develop and use conceptual understanding.
- **Open-minded** – we seek and evaluate a range of points of view.

Lesson



- 1 *The students should work in their learning groups. Ensure your room is set up to encourage effective discussion between the students. An effective arrangement is square tables with the four students sitting two either side facing each other. The tables could be arranged at a slight angle to ensure everyone can clearly see the board.*

Recap/introduce the different roles that the students work in for the learning groups: **manager**, **reporter**, **encourager** or **recorder**. Use the materials from Figure 24 on page 86 if required. These roles can be allocated to different students when you use the learning groups or you could choose to give a student a specific role for a sustained period to allow them to develop their skills. Two students could share a role, depending on the number of students in your class. The encourager is an ideal role for sharing. The students can also wear badges to reinforce the roles that they are playing.

- 2 Explain to the students that they are going to debate in their learning groups:

Is the calculator better than your brain? Why?

Reveal the word '**debate**' on the board and ask the students to discuss as a learning group what they think this word means and how you should behave when debating.

While the discussions are taking place, observe the students and when you think it is an appropriate moment bring the discussions to a close and ask the groups for feedback. Through careful questioning reach agreement on a shared definition of a debate. Possible questions to develop this are:

Do you agree a debate is where we ...?

What should you do if you disagree with someone's ideas?

Do we have to agree with everyone's ideas?

Will there be a right or wrong answer?

This could be developed further by briefly creating a list of behaviours we should see when a debate is happening, such as sharing ideas, listening and responding to people's suggestions. If you have already made such a list, refer to it here.

Remind the students that they have to share their opinions but can also ask questions to challenge one another. You could provide the students with question prompts to encourage them to develop their thinking. Students can choose to record their work in their own format.

■ Brain vs. calculator



- 3 Ask the students to work in their learning groups and debate whether a calculator is better than their brain. You should act as a facilitator, observing the groups and intervening only when necessary. While listening to the group discussion, note any misconceptions or interesting ideas and feed these into the discussion by posing a question, or return to them at another point.

To probe and deepen the students' discussions, ask them to think about the following during their discussions. You could reveal these questions on the board once the discussions are under way to extend them further:

Can you think of ideas for and against?

Why do you think that ...?

What evidence do you have to support your ideas?

Before you want the students to feed back, give them a five-minute warning to allow the reporter to prepare. If this is the first time the students have worked in these roles, you could model how to effectively report back to the class.

Reflection time – what have we learned?

Ask the reporters to feed back their discussion and their verdict. Key questions are:

What did you discuss?

Why did your group think that?

Can you expand on your idea further?

What conclusion did you come to?

Was it a difficult decision to make? Why?

Ask each group to nominate a member who they think has improved and has put greater effort into their role and learning. Take feedback from the groups and ask them to explain why they have chosen that person.

Challenge

Ask the students to think about how we could find out whether the brain or the calculator is better. They could create a plan for an investigation using the model they use in science lessons.

Further developments

If the students design a plan to investigate whether the brain or the calculator is best, you could then explore this as a class. For instance, using the idea of multiplying by 10: which is quicker, the calculator or the brain?

An alternative debate could be the brain versus the computer. Which is better?

DOWNLOADABLE RESOURCES

Video of students comparing a brain with a calculator

www.hoddereducation.co.uk/ib-extras

Students' responses

■ What is a debate?

'It's a civilized argument where you tell each other your points.'

'It's a competition where you try to make your point.'

■ Brain vs. calculator

Brain	Calculator
If you don't have a brain you can't work a calculator.	A calculator only knows about maths, it doesn't know about anything else.
The brain can do a simple calculation such as 7×7 quicker than a calculator.	A calculator can't read or write.
The brain invented the calculator.	A calculator is a lazy way of learning.
The brain can say things instantly but you have to type things into a calculator to come up with an answer.	A calculator is quick and fast.
You can learn and challenge yourself with a brain.	A calculator is always reliable.
A brain is more efficient.	It is small and light.
You can train your brain but not a calculator.	It doesn't get fatigued.
The brain can think more, it even lets you dream.	A calculator is useful if you don't have paper.
The brain can fix a calculator, a calculator can't fix a brain!	You need a calculator for more complex calculations.
Brains can grow and develop as you learn.	The calculator is faster.
	The calculator is easier, more efficient and quicker.
	A calculator doesn't change.

During the debate the students also posed questions as part of their response:

'Does a calculator understand or has it just learned a method?'

'Which came first, the brain or the calculator?'

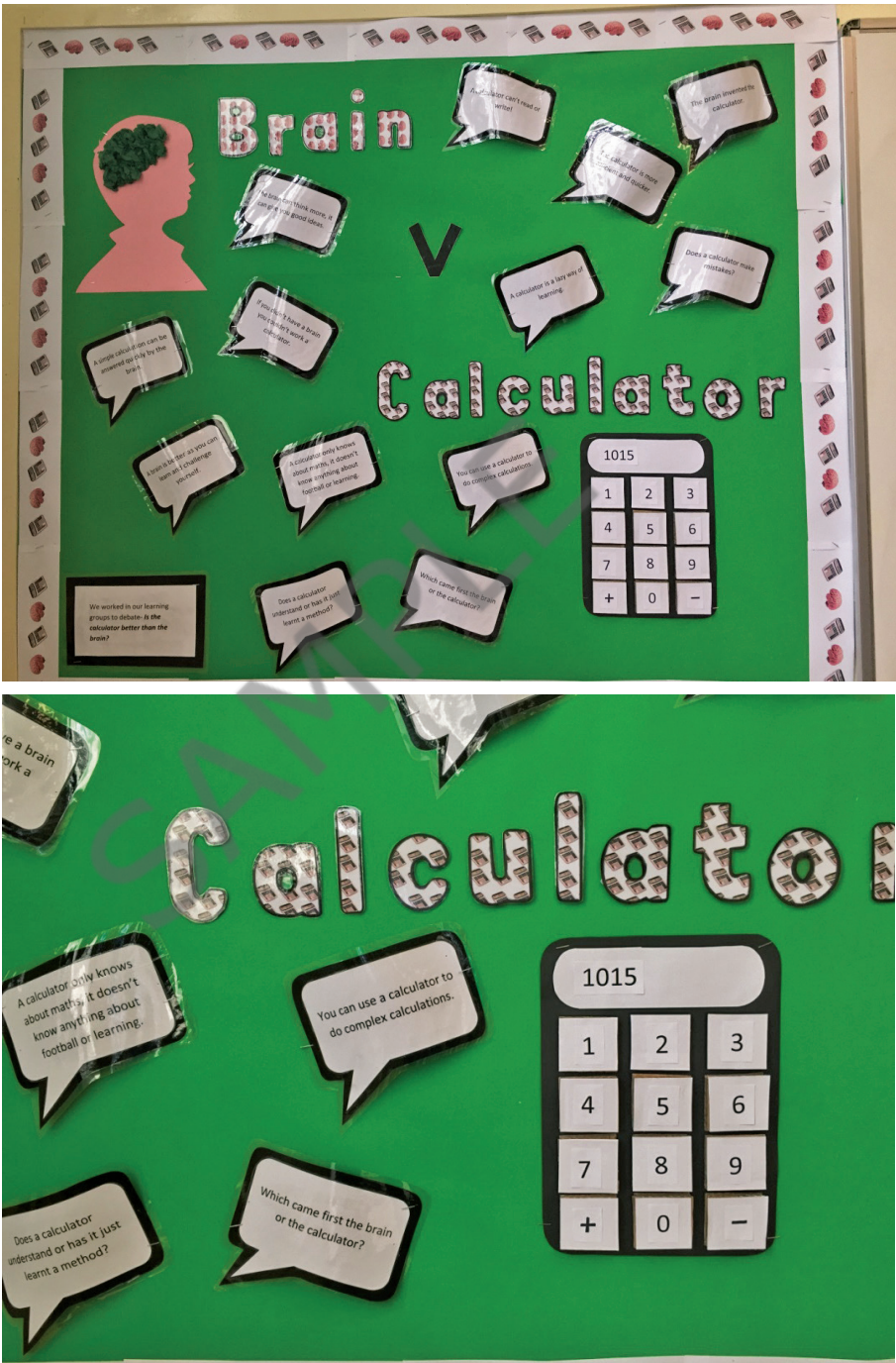


Figure 107 Brain vs. calculator display

5 Mathematical mistakes

Learning objectives	Resources
<ul style="list-style-type: none"> To describe how mistakes can help us to learn To identify how we should respond to a mistake 	<ul style="list-style-type: none"> Mathematical mistakes (see Figure 108) Video of Dr Jo Boaler at https://vimeo.com/103853269

IB Learner Profile

- **Risk-takers** – we are resourceful and resilient in the face of challenges.
- **Communicators** – we express ourselves confidently and we collaborate effectively.
- **Knowledgeable** – we develop and use conceptual understanding.

Lesson



- 1 Arrange the students so they are sitting with their talk partner and have a clear view of the board and the teacher.

Share a calculation with the students and explain that you have completed it. You can use Figure 108 or make up your own to match what the students are learning at the moment.

Visible thinking – in the examples that you provide, it is important to model the steps that you have gone through to solve the calculation (ensure some aspects are correct and some include mistakes). This will stimulate discussion and allow the students to identify specifically where you went wrong. You could also share examples of mistakes that the students are making in their learning.

Ask the students to look at your calculation and to discuss and then feed back whether you have been successful or not. Probe their understanding further by asking:

What mistake did I make?

Why do you think I got the wrong answer?

How does this help you as a learner?

How can it help a teacher?

My maths**What is 27% of £180?**

10% is £18
 25% is £45 (20% is £36 and 5% is £9)
 1% is £1.80
 The answer is £46.80

My maths

Fred has £180 which is $\frac{2}{5}$ of his money.
 How much money does Fred have altogether?
 180 divided by $\frac{2}{5}$ is 36
 $36 \times 2 = 72$
 He has £72 altogether.

Figure 108 Examples of mathematical mistakes

- 2 Repeat for a different calculation.

■ Learning from mistakes



- 3 This lesson introduces Jo Boaler and her work to the students. Tell the students that Dr Jo Boaler is a British education author and a Professor of Mathematics Education at the Stanford Graduate School of Education in California. She is involved in promoting mathematics education reform and helping develop mathematical mindsets.

Watch the video clip of Dr Boaler discussing maths and mistakes.

Ask the students:

What did you learn from the video clip?

Do you think that you are born to be good at maths?

Do your parents believe that they were better at one subject at school?

Do your parents say there was a subject they found hard at school?

How do you feel about making mistakes?

Does your attitude to mistakes change depending on the subject?

- 4 Share the quote below from Jo Boaler in which she explains what happens when we make a mistake in our learning:

When teachers ask me how this can be possible, I tell them that the best thinking we have on this now is that the brain sparks and grows when we make a mistake, even if we are not aware of it, because it is a time of struggle; the brain is challenged and the challenge results in growth.

Available at www.youcubed.org/evidence/mistakes-grow-brain/.



- 5 Revisit the mistakes that you shared with the students at the start of the lesson and ask them to discuss what type of mistake they think they were:
- Were my mistakes part of the learning process or careless mistakes?**

Then, at an appropriate point when the students are ready, ask them for feedback.

Probe the students' thinking further by asking them to think about the following questions. You could display them on a board and slowly reveal a question when it is appropriate or have them as a question prompt on the tables:

Which mistakes do you make?

Which type of mistake helps us to develop as a learner?

What can we do to avoid making careless mistakes?

Reflection time – what have we learned?

Explain that research shows that mistakes are an important part of the learning process and, depending on how we respond, they can help us learn. Ask the students to think about and discuss how we can ensure that our classroom culture and how we act allow us to make mistakes and learn from them. Ask the students to talk to their partner and discuss:

How can we create a classroom culture that supports mistakes as part of the learning process?

What can you do to help?

What could a teacher do to develop this?

What needs to change?

Challenge

You could widen the discussions and ask the students to think about how we can create a school culture that supports making mistakes as part of the learning process.

Further developments

Share some of the sayings that are used to explain how mistakes are part of the process of learning, for example **'fail and sail'**, which can be written to form acrostics (see 'Students' responses').

Can the students create their own acrostics (see examples below)? You could develop this further by asking the students to illustrate them, for example as a sketchnote.

Create a class display analysing a mistake in maths and include QR codes that link to video clips of the students discussing mistakes.

Use mistakes in lessons: they can be a great warm-up to ignite students' thinking.

DOWNLOADABLE RESOURCES

PowerPoint presentation with examples of mathematical mistakes

www.hoddereducation.co.uk/ib-extras

Students' responses

■ How does this mistake help you as a learner?

'When you make mistakes you learn and improve.'

'You can see what to do.'

'If you learn from mistakes, you have a growth mindset.'

■ How can it help a teacher?

'If I make a mistake, you know what to teach me next.'

'Teachers can now help you.'

'If you copy, it doesn't help you learn.'

'They show teachers what you need help in to improve.'

■ What can students do to develop a classroom culture that supports mistakes as part of the learning process?

'Students can share their mistakes. Don't hide them.'

'Some mistakes are careless ones and we should avoid making those.'

'Other people can support you by not laughing if you make a mistake.'

'Other students can explain how to do something and help you learn.'

'Don't show off!'

■ Acrostics

Let's

Educate

And

Revise

Numeracy

Begin

Attempt

Numerous tries/Never give up

Go again

6 Learning pathways

Learning objectives	Resources
<ul style="list-style-type: none"> To give opinions on what we mean by the term 'learning' To create a way of explaining learning to younger students 	<ul style="list-style-type: none"> The brain working as we learn (see Figure 109) Forest pathway photographs (see Figure 110)
IB Learner Profile <ul style="list-style-type: none"> Communicators – we express ourselves confidently and we collaborate effectively. Reflective – we work to understand our strengths and weaknesses. Thinkers – we use critical and creative thinking skills. 	

Lesson



- 1 Arrange the students so they are sitting with their talk partner and have a clear view of the board and the teacher.

Ask the students to discuss with their talk partner what they think we mean by the word 'learning'.

If students require further scaffolding, ask:



Think of something you are good at – something that you know you do well. Discuss how you became good at this.

Think of something that you did in fact learn successfully, but at the time you did not want to learn it. Maybe it is something that you are now glad you learned. What kept you at it?

Take feedback and probe the students' thoughts further by asking questions such as:

Why do you think that?

Can you give a personal experience that reflects that?

Can you explain what happens in the brain when we are learning?

- 2 Explain to the students how the brain works when we are learning, using Figure 109. Explain that there are roughly 150 000 km (or more) of neural networks in the human brain and 150 000 km is similar to travelling approximately four times round the Earth, as it is approximately 40 000 km to travel around it once.

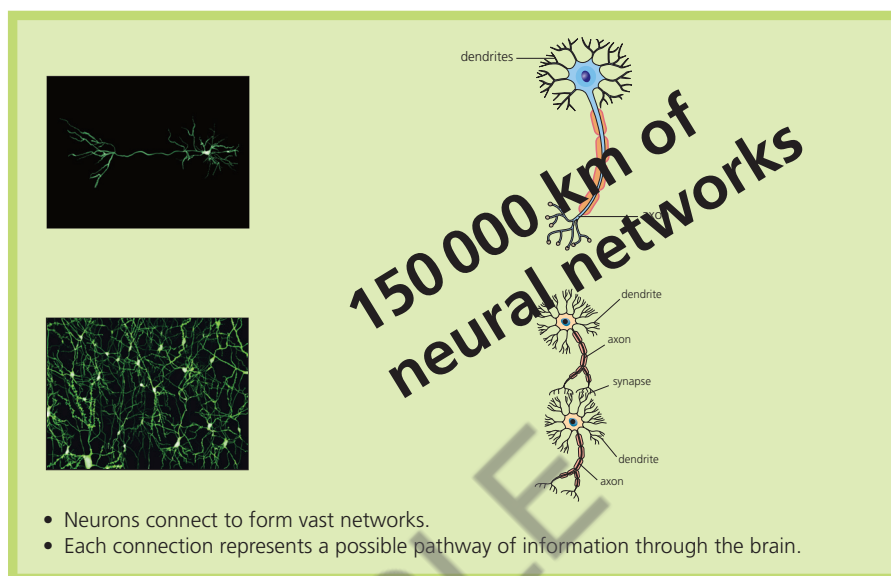


Figure 109 How the brain works when we are learning

■ Learning pathways



- 3** Show the students the images of a forest and how a pathway is created (Figure 110). The three images show the creation of a pathway through the wood over time.

Ask the students to discuss with their talk partner how these images relate to learning. Ask them to think about:

Do you think the images reflect learning effectively?

Why do the images represent learning effectively?

Is there anything you would add to illustrate learning more effectively?

Take feedback from the students and use questioning to probe the learning further.

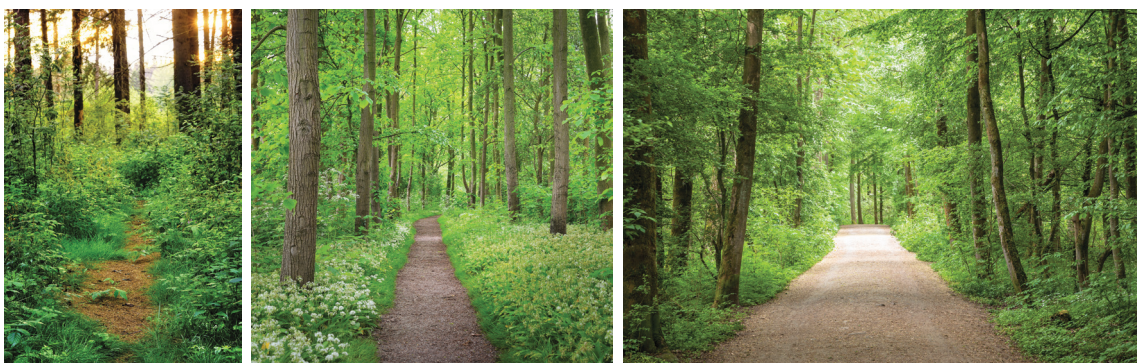


Figure 110 Creating forest pathways

- 4 Explain to the students that, over a series of lessons, their task is to create a way of illustrating and explaining learning to younger students. Give them the time and materials to discuss and plan how they could do this. Allow the students to work independently and observe them discussing and creating their ideas.

Reflection time – what have we learned?

Ask the students to feed back their discussion and possible ways of explaining learning to younger students. Key questions are:

What did you discuss?

Why did your group think that?

How could you make sure it was accessible to students aged 7?

Ask each group to nominate a member who they think has improved and has put greater effort into their role and learning.

Challenge

Ask the students to think about any potential challenges to their ideas.

Further developments

This activity could also be linked to the students' transition to secondary school. They could reflect on the challenges they might face and how these might impact on their mindset.

DOWNLOADABLE RESOURCES

- PowerPoint presentation about how the brain works during learning, including forest pathways imagery
- Video of students discussing the creation of the forest pathway

www.hoddereducation.co.uk/ib-extras

Students' responses

■ What does learning mean?

'When you understand, you know what it is. Learning is the process you go through to learn, to understand something. It's not always an easy process.'

'You start off with a small circle when you're not really good at something. Every time you learn something new you get a bigger circle and you know it.'

'Learning means challenging yourself to do more. Practising what you are doing. The challenge is personal to you.'

'Developing new skills to make your brain bigger.'

'Learning is when if I've made a mistake I could unpick it, and then I would know not to make the mistake again.'

'Learning can be knowledge and a skill. Learning to ride a bike is a skill. Learning algebra is knowledge.'

■ Looking at the images of the forest, can you explain how these can reflect learning and the learning process?

'When the trees are all tangles and it was messy and all over the place you could metaphorically speaking have a rope. That rope could be a skill to learn something new. You also need a growth mindset to conquer it. Because if you didn't and you just gave up, you'd be stuck in the mess of weeds.'

'At the end of the final image you could have a blockage and you have to clear it. Once you've cleared it, you may need to clear it again to ensure you learn. You keep doing that for the rest of your life.'

'An animation could be added. There's a baby on the path, it is a narrow path, as you get older and learn more the path gets bigger. You come to a fork in the road where there are two different paths. You can either go on the fixed mindset path and give up on the problem, or go down the growth mindset path and find out what you need to know.'

■ How can you explain learning to younger students?

'Using Adobe Spark Video as we can have pictures and talk about it. You'd have a picture of a deflated balloon. Your knowledge begins like a deflated balloon, as you learn it becomes bigger. Basically the balloon represents the brain.'

CHAPTER 3

Lessons for 6–7-year-olds

Lesson	Focus	IB Learner Profile	Page
1 Playing teacher	Working in specific roles in a learning group; strategies that would help a child with a fixed mindset engage in their learning	<ul style="list-style-type: none"> • Caring – we show empathy, compassion and respect. • Communicators – we express ourselves confidently and we collaborate. 	87
2 'Oh no! I've made a mistake!'	How we feel when we make a mistake; strategies that help us learn	<ul style="list-style-type: none"> • Caring – we show empathy, compassion and respect. • Risk-takers – we are resourceful and resilient in the face of challenges. • Knowledgeable – we develop and use conceptual understanding. 	91
3 'Girls can't do that!' Dream big!	Discussing and debating whether girls should be allowed to be engineers; identifying how we should respond to a mistake	<ul style="list-style-type: none"> • Open-minded – we seek and evaluate a range of points of view. • Principled – we act with integrity and honesty, with a strong sense of fairness and justice. 	95
4 Super effort	Creating a character to represent effort; the characteristics of effort	<ul style="list-style-type: none"> • Communicators – we express ourselves confidently and we collaborate. • Reflective – we work to understand our strengths and weaknesses. 	99
5 Challenge mountains	Setting learning challenges; reviewing their challenge and identifying progress	<ul style="list-style-type: none"> • Reflective – we work to understand our strengths and weaknesses. • Risk-takers – we are resourceful and resilient in the face of challenges. 	109
6 Ding ding! How much effort?	Different stages of effort; creating their own effort meter	<ul style="list-style-type: none"> • Thinkers – we use critical and creative thinking skills. • Knowledgeable – we develop and use conceptual understanding. 	114

Overview

From age six onwards, students are required to work collaboratively with others through the introduction of 'learning groups'. This builds on the previous lessons where the students worked with a talk partner, as they are now required to work in groups of four and to take on a specific role within the group. Students are provided with opportunities to debate ideas and share different opinions. The idea of mistakes as part of the learning process is explored in greater detail and students are encouraged to identify strategies to enable them to learn. The concept of effort is introduced and the students are encouraged to reflect on their own effort and their desire to be challenged.

Learning groups

The learning groups are designed to provide a clear and coherent structure to group work, which enables students to develop a range of skills in addition to their focus activity. Students must take on one of four key roles: a **manager**, a **reporter**, an **encourager** or a **recorder** (see Figure 24). These are designed to be flexible and can be adapted to suit the needs of your class, so roles, for instance, could be shared. Initially it is advisable to allocate a specific role to a student and to provide them with a number of opportunities to explore the same role. As students become familiar with this way of working and also more mature, the roles can be changed regularly as this allows them to demonstrate a range of skills.

Prior to using learning groups to develop mindsets in school it would be useful to give the students experience of working in this way. Initially they could be introduced to the different roles and asked to suggest ways in which they should behave or things they should say for each role. These ideas could then be used to create posters to remind the students how to be successful in the different roles. Students should also be given opportunities to practise the different roles. Providing them with opportunities to discuss simple ideas allows them to think more about what is happening in the group and their role. This can then be further developed by activities that require the students to share differing opinions.

When the students are working in roles, it is important for you, the teacher, to act as a facilitator. Listen to what the students are saying as it will reveal a lot about their attitudes to learning and their individual mindsets. Try not to intervene since allowing the students to resolve issues within their group is an important skill for them to develop. This allows them to develop as

independent learners. You could make a note of the students' responses to allow you to revisit misconceptions at a later point or to share ideas through a display. The use of learning groups could be developed further by students creating their own success criteria for each role, or the roles could be adapted or extended. For example, the role of a questioner could be introduced that would require the individual to ask questions to clarify meaning and develop ideas further.

Manager

Their role is to:

- make sure everyone understands
- keep the group on task
- be fair
- ensure the work is completed and decisions are made.



Reporter

Their role is to:

- share the findings of the group with others
- speak clearly and confidently
- read through and organize ideas.



Encourager

Their role is to:

- make sure everyone joins in
- reward and praise people
- be positive
- increase the confidence of the other group members.



Recorder

Their role is to:

- record the ideas of the group
- suggest ways of wording ideas
- read through and check work
- make sure they record everyone's ideas.



Figure 24 Roles in learning groups

1 Playing teacher

Learning objectives	Resources
<ul style="list-style-type: none">• To work in a specific role in a learning group• To identify strategies that would help a child with a fixed mindset engage in their learning	<ul style="list-style-type: none">• Picture of a grumpy, frustrated child, 'Sara'• Cards or posters explaining learning group roles (see Figure 24 on page 86)• Role badges showing 'manager', 'reporter', 'encourager', 'recorder'

IB Learner Profile

- **Caring** – we show empathy, compassion and respect.
- **Communicators** – we express ourselves confidently and we collaborate effectively.

Lesson

- 1 *Arrange the students so they are sitting with their talk partner, either on the carpet or at desks.*

Introduce the concept of mindsets using the familiar context of school and a fictional child, Sara, being reluctant to learn. Students will relate to some of the behaviours and feelings that this fictional character displays.

Introduce the character Sara to the students using an image of a grumpy, frustrated child. Depending on your class and the behaviours they display, you could change the gender and the name of the character so that it clearly reflects their needs.

Explain who Sara is and how she behaves, for example: 'This is Sara. She is a new child who will be coming into Class 2 shortly. However, Sara doesn't like school and can misbehave in class.'

- 2 Develop this further by sharing some more information about Sara. Explain that she:
 - refuses to do the work in class
 - moans and makes silly noises
 - says everything is easy so she won't bother
 - bangs equipment and fiddles with pencils

- tries to distract others
- shouts out and disrupts lessons
- grumbles 'I hate Maths/English!'.

You could just focus on some of these behaviours or you could adapt some of them to better reflect the nature of the students in your class.

3 Ask the students to discuss Sara with their talk partner:

What type of mindset does Sara have?

Why do you think that?

Ask the students to feed back to the class and carefully challenge the reasons for their opinions.

■ Playing teacher



4 *The students are now going to work in learning groups. Ensure your room is set up to encourage effective discussion between the students. An effective arrangement is square tables with the four students sitting two either side facing one another. The tables could be arranged at a slight angle to ensure everyone can clearly see the board.*

Explain to the students that they are now going to work in learning groups, with each individual playing a specific role: **manager, reporter, encourager, recorder**. Introduce the group roles to the students using cards or posters as shown in Figure 24 on page 86. If students have already explored these roles when completing a simple task, they will have become familiar with what their job entails.

Allocate a role to each student. Two students could share a role depending on the number of students in your class. The encourager is an ideal role for sharing. The students can also wear badges to reinforce the roles they are playing.



5 The students should then discuss their ideas about the following question as a small group, working in their allocated role:

If you were Sara's teacher, what would you do to encourage her to join in more with her learning?

Once the discussions are under way, you should undertake the role of a learning facilitator. Listen to what the students are saying as it will reveal a lot about their attitudes to learning and their individual mindsets.

Try not to intervene since allowing students to resolve issues within their

group is an important skill for them to develop. This allows them to develop as independent learners. You could make a note of the students' responses to allow you to revisit misconceptions at a later point or share ideas through a display.

It is beneficial to give the students time warnings to ensure they remain on task and to allow the reporter to prepare to speak and share the group's ideas.

Reflection time – what have we learned?

Prepare the groups for feedback time by giving them a five-minute warning to prepare the reporter to share the group's ideas. To begin with, you could select a confident student for that role within the group, but as the students become more familiar with working in role, more reluctant students could be encouraged to try the role. Remind them that you will be expecting them to share:

What would you do as Sara's teacher to encourage her to want to be a learner?

Why do you think that would be an effective strategy?

Following the five-minute preparation time, the reporter should then give feedback on their group's discussion. Provide each group with the opportunity to feed back their ideas.

Challenge the students' thinking and encourage other members of the group to participate. Ask them to explain why they think their idea would be effective. Ensure you probe the students to explain why they have reached their decision and ask them:

Did everyone in your group agree?

Can you see any problems with their ideas?

Challenge

Ask the students to discuss if they have ever felt like Sara and what caused them to feel like that. Thinking back to that time, could they have behaved differently?

Further developments

A follow-up discussion could be based on whether they would allow a child with a fixed mindset to attend their school. Again, the students could debate this within their learning groups.

To continue to develop the quality of the groups' interactions and roles, you could develop success criteria for each role. Two adults could model successful and unsuccessful group roles. The students could observe the interaction and discuss the differences and provide feedback for the adults in order to generate success criteria.

Students' responses

- If you were Sara's teacher, what would you do to encourage her to join in more with her learning?

'Give her a special seat with a friend who would show her what effort looks like.'

'Let her do fun things and enjoy her learning.'

'She needs to try her best and challenge herself!'

'Don't give her easy work - she needs to challenge herself.'

'When I first started at school I was nervous.'

'She should ask for help.'

'The teacher should tell her she will lose her golden time if she doesn't try hard.'

DOWNLOADABLE RESOURCES

Roles in learning groups – cards

www.hoddereducation.co.uk/ib-extras

2 'Oh no! I've made a mistake!'

Learning objectives	Resources
<ul style="list-style-type: none"> To identify and describe how we feel when we make a mistake To identify strategies which can help us to learn 	<ul style="list-style-type: none"> <i>The Girl Who Never Made Mistakes</i> by Mark Pett and Gary Rubinstein Visualizer or document camera (optional) Picture of the deep, dark learning hole (see Figure 25)

IB Learner Profile

- Caring** – we show empathy, compassion and respect.
- Risk-takers** – we are resourceful and resilient in the face of challenges.
- Knowledgeable** – we develop and use conceptual understanding.

Lesson



- 1 Arrange the students so they are sitting with their talk partner and have a clear view of the board and the teacher.

Show the students the following words, read them to the class and then ask them to read them together with you: **'mistake'**, **'error'**, **'incorrect'**, **'wrong'**.

Before they begin the discussion, remind them that you will be selecting students randomly to share their ideas. Ask them to discuss with their talk partner what the words mean and take feedback from them using lollipop sticks.



- 2 Read the story *The Girl Who Never Made Mistakes* until Beatrice makes a mistake at the talent show on **page 23**. You could use a visualizer to share the book with the students.

Look carefully at the picture of Beatrice on stage after everything has gone wrong. Zoom in on her facial expression to focus the students' attention. Ask the students to discuss:

How does Beatrice feel?

Why does she feel like that?

What would you do if you were Beatrice?

You could display the key questions for discussion on the board to allow the students to focus their discussions.

Take feedback from different students and act as a scribe or ask another adult to jot down the students' opinions and ideas. These could be used for a display to illustrate learning from mistakes.

■ The deep, dark learning hole



- 3** Show the students the picture of the deep, dark learning hole and explain that often, when we have made mistakes, we feel as if we are stuck in a 'learning hole'.

Explain to the students that they are going to think of ways to help Beatrice and others out of the learning hole, and record their ideas on paper.

If appropriate you may want to give guidance for the students to focus their learning. This could be displayed on the board and include:

What would you say?

What could you do?

Who could help you?

How could you represent that in a picture?

You could give the students some talk time with their talk partners before they begin working individually to record their ideas.



Figure 25 The deep, dark learning hole

Reflection time – what have we learned?

Perhaps using a visualizer, share examples of the students' ideas and ask them:

Can you share your drawing with the class?

Why have you drawn that?

What does it represent?

How would you feel if you made a mistake like Beatrice and were stuck in the deep, dark learning hole?

Challenge

Challenge the students to think about:

What can cause you as a learner to enter the learning hole?

Is there anything specific you can do to help yourself get out of it?

Think about an occasion when you thought you were in the learning hole in school:

How did you feel?

Did you try to get out of it?

What did you do?

Did anyone help you?

Further developments

Use the students' ideas to create a large learning hole display. Show the different strategies represented with a visual prompt as well as words, for example a ladder. The display can act as a visual reminder for learners and for both students and teachers to use during the learning in the classroom.

Give the students some talk time to discuss:

How can teachers support learners in overcoming their mistakes?

DOWNLOADABLE RESOURCES

- PowerPoint presentation 'The deep, dark learning hole'
- Video of students deciding how to get out of the deep, dark learning hole

www.hoddereducation.co.uk/ib-extras

Students' responses

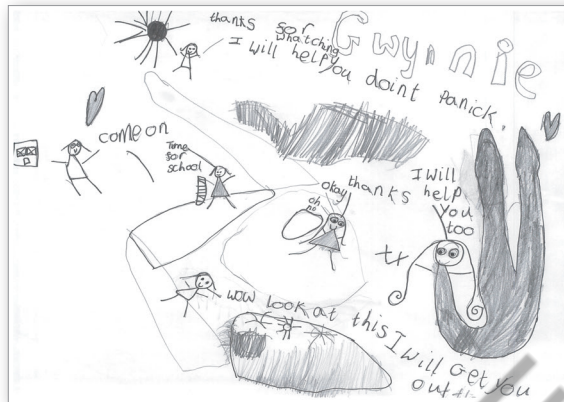


Figure 26 Don't panic!

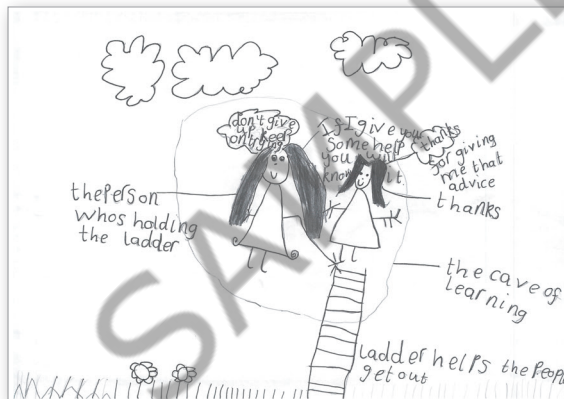


Figure 27 Helping someone out of a learning hole



Figure 28 Getting out of the learning hole

3 'Girls can't do that!' Dream big!

Learning objectives

- To discuss and debate whether girls should be allowed to be engineers
- To identify how we should respond to a mistake

Resources

- *Rosie Revere, Engineer* by Andrea Beaty
- Visualizer or document camera (optional)

IB Learner Profile

- **Open-minded** – we seek and evaluate a range of points of view.
- **Principled** – we act with integrity and honesty, with a strong sense of fairness and justice.

Lesson

- 1 Arrange the students so they are sitting with their talk partner and have a clear view of the board and the teacher.

Show the students a picture of the character Rosie from the book *Rosie Revere, Engineer*. Ask the students to think about what things the character Rosie might be successful at.

Before they begin the discussion, remind the students that you will be selecting students randomly to share their ideas. Ask them to discuss with their talk partner and take feedback from them using the lollipop sticks. Challenge the students' answers further by asking:

Why do you think that?

■ Dream big!



- 2 Read the story until **page 12**, where Rosie decides to keep her dreams of being an engineer to herself. You could use a visualizer to share the book with the students.

Explain that Rosie wants to be an engineer but some people do not believe girls can be engineers. Ask the students to initially discuss with their talk partner:

What do you think an engineer does?

After allowing the students a few minutes to discuss it, take feedback and clarify the different things an engineer does. You could also display images of different types of engineers at work, to reinforce the concept.



- 3** Once the students understand what an engineer does, ask them to discuss with their talk partners:

What are the reasons why Rosie (a girl) could or couldn't become an engineer?

If appropriate you might want to give guidance for the students to focus their learning. This could be displayed on the board and include:

Can you think of any reasons why a girl shouldn't be an engineer?

How would you encourage Rosie to become an engineer?

Can girls and boys do any job they'd like?

Initially, ask the students to share their opinions through a quick poll on whether they think Rosie could or could not be an engineer. Then take feedback from the students and probe their ideas further by asking:

Why do you think that?

Do you need to be good at something to do it?

- 4** Continue to read the story to the students until **page 26**. Reread the line: 'The only true failure can come if you quit.'

Ask the students to talk to their partner:

What happened at the end of the story?

Why did her aunt describe her invention as 'Your brilliant first flop was a raging success'?

Why is something that went wrong still a success?

Reflection time – what have we learned?

Ask the students:

Now you've read the whole story, do you still believe that girls can/can't be engineers?

Take feedback from individual students and, if appropriate, ask other students to comment on these ideas.

You could share photographs of men and women doing jobs that are not stereotypical, including being an engineer or a male nurse, to reinforce the fact that men and women can do any job they wish. There are no limits to what the students can become, whatever their gender.

Challenge

Use the word **FLOP** as a stimulus for the students to create an acrostic, which could act as a learning prompt. You could give the students an example and then ask them to create their own. For example:

First

Learning

Often

Practise

Further developments

Ask the students to think about what they would like to be when they are older. Encourage them to dream big and to draw themselves in the future in their chosen career.

Other activities to support this book: www.andreabeaty.com/.

Students' responses

■ What could Rosie be good at?

'Ballet.'

'Doing hair.'

'Helping people.'

'Playing with animals.'

'Looking nice.'

'Handwriting.'

■ What is an engineer?

'They make things like a car.'

'They fix things.'

'They invent and make things.'

■ Should Rosie (a girl) be an engineer?

'She shouldn't be an engineer as she gets so sad when things go wrong.'

'She can as boys and girls can do the same thing.'

'Girls and boys can do what they want if they put their minds to it.'

'We think Rosie should be an engineer as she is good at making things.'

'No, because men normally get that job.'

'Boys and girls can get any job if they work hard and practise.'

'She shouldn't be an engineer as she is too nervous.'

'Being an engineer is not just a job for boys!'

'Yes, because she makes fantastic inventions.'

'Yes, because she has tried hard.'

'In the olden days, a girl wouldn't be one.'

'Rosie needs to talk to people and see if they would let her be one.'

■ How would you encourage Rosie to try?

'Tell her what she is good at.'

'Say never give up!'

'Tell her if you work hard at school you can do it!'

'Keep up your work.'

'Tell her not to listen to the grumpy uncle, he's just being mean.'

■ Acrostics for FLOP

Failing

Fantastic

Learning is an

Learning

Option so

Only if you

Persevere

Persevere

4 Super effort

Learning objectives	Resources
<ul style="list-style-type: none"> To create a character to represent effort To explain what the characteristics of effort are 	<ul style="list-style-type: none"> Growth and fixed mindset vocabulary cards (see Figure 29) Wanted poster template (see Figure 30) Visualizer or document camera (optional)

IB Learner Profile

- Communicators** – we express ourselves confidently and we collaborate.
- Reflective** – we work to understand our strengths and weaknesses.

Lesson

- 1 *Arrange the students so they are sitting with their talk partner. The talk partners should be changed regularly to provide students with the opportunity to learn with different students.*

Give the students key vocabulary cards with words connected to growth and fixed mindsets (see Figure 29).

You could personalize some of the statements so that they reflect behaviours that are specific to your class.

Ask the students to read the words with you and then to you. Ask them to work with a talk partner and to sort the vocabulary into groups. Explain that there is no right answer and you are just interested in their different ideas.

If the students are struggling with any of the words, build in some talk time to discuss and clarify their meaning.

gives up	keeps trying to learn new things	chooses easy work	chooses tricky work	practises
perseveres	tries again	wants to be seen as clever	finds a new strategy to help them learn	likes being first to finish

Figure 29 Growth and fixed mindset vocabulary cards (1)



- 2** Ask the students to feed back their ideas on how they have sorted the cards:

How have you sorted your vocabulary cards?

What connections have you made?

Could you add any other words or phrases to your group?

Has anyone sorted them in a different way?

It would be useful to display the vocabulary cards on the board or via a visualizer as it will help illustrate the students' ideas clearly.

■ **Wanted: Super Effort!**



- 3** Explain that you want the students to create a character to represent 'Super Effort' when they are learning.

Ask the students to discuss with their talk partner:

How does someone demonstrating super effort behave?

How could you represent that using a character or a person?

What sort of learner would they be?

What might they look like?

You could display these questions as a visual prompt on the board and then, as the students' discussions develop, you could reveal the next question to focus on when appropriate. It is important to be responsive to your students' discussions and to continue to move the learning on.

- 4** Ask each student to complete a wanted poster for the character 'SEF' and to describe how the character behaves (see Figure 30).



Figure 30 Wanted poster template

Reflection time – what have we learned?

Give the students a few minutes to prepare themselves to share their ideas. Explain to them that you are going to randomly select students to share their wanted posters for SEF and ask them to explain the characteristics of SEF.

Explain to the students that you are interested in:

Why have you represented/drawn SEF in this way?

How does he or she behave?

What would you do if you found learning challenging?

Allow the students a few minutes to think through their ideas and explanations before using lollipop sticks or an alternative method to randomly select who will respond.

Challenge

Ask the students to write instructions on ‘How to behave like SEF’ or ‘How to be a learning ninja’ (see Figures 33–36).

Further developments

The students could create wanted posters for NEF (No Effort) for crimes against learning and include characteristics of poor learning behaviour.

Select a version of SEF to adopt as a class, create a class puppet and use it as a visual reminder of effective learning behaviours. Display the wanted posters as a reminder of the expectations for learners.

DOWNLOADABLE RESOURCES

- Growth and fixed mindset vocabulary cards
- Wanted poster template

www.hoddereducation.co.uk/ib-extras

Students’ responses

One student created the idea of a ‘learning ninja’ in response to the SEF activity. This led to a great whole-class discussion on how a learning ninja behaves. The students identified a range of characteristics and this had a profound effect on the culture of the classroom. Students would remind one another to behave like a learning ninja and would praise one another for displaying the effective characteristics. Occasionally, they would even remind me!

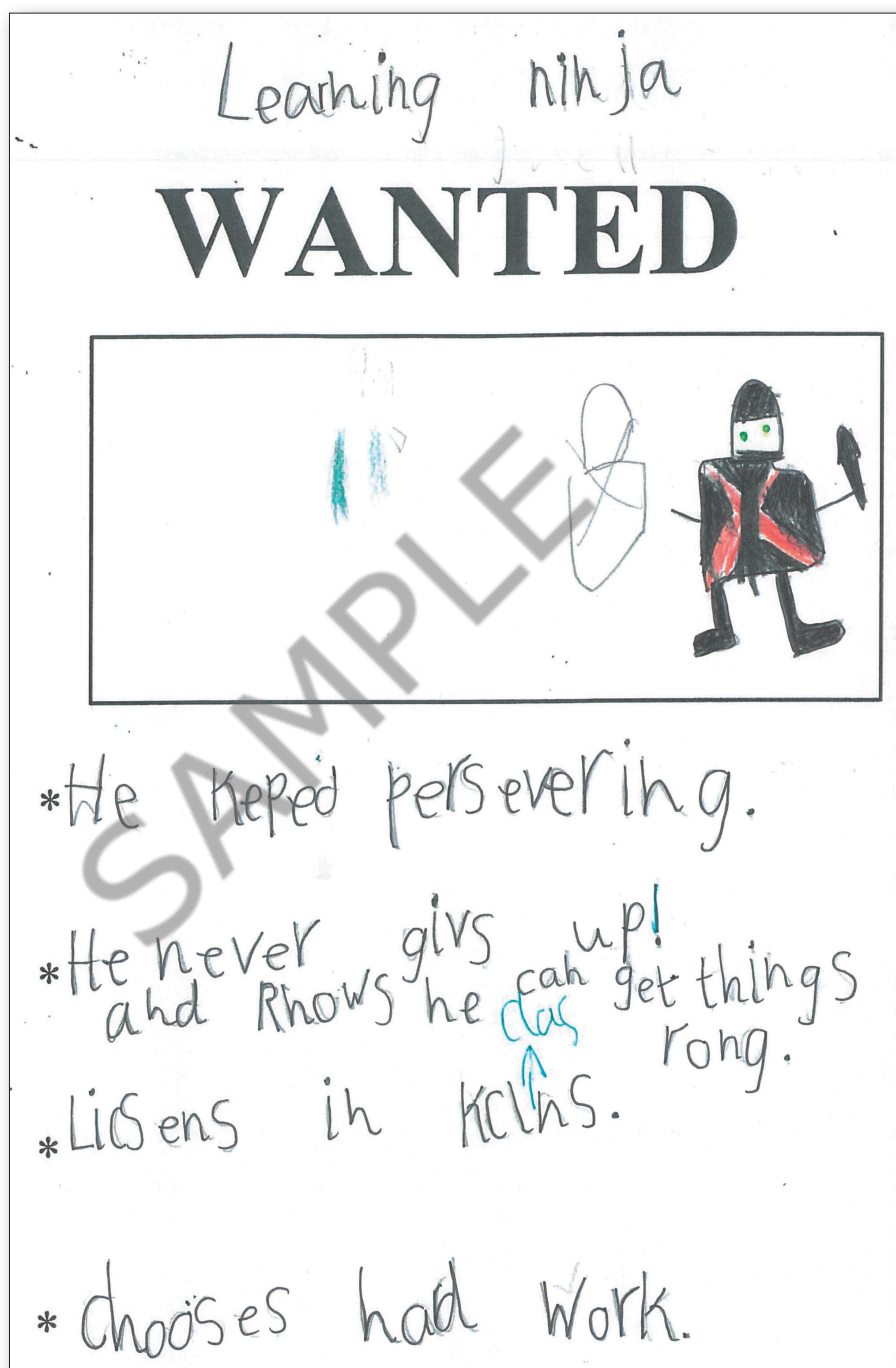


Figure 31 Advert for a learning ninja

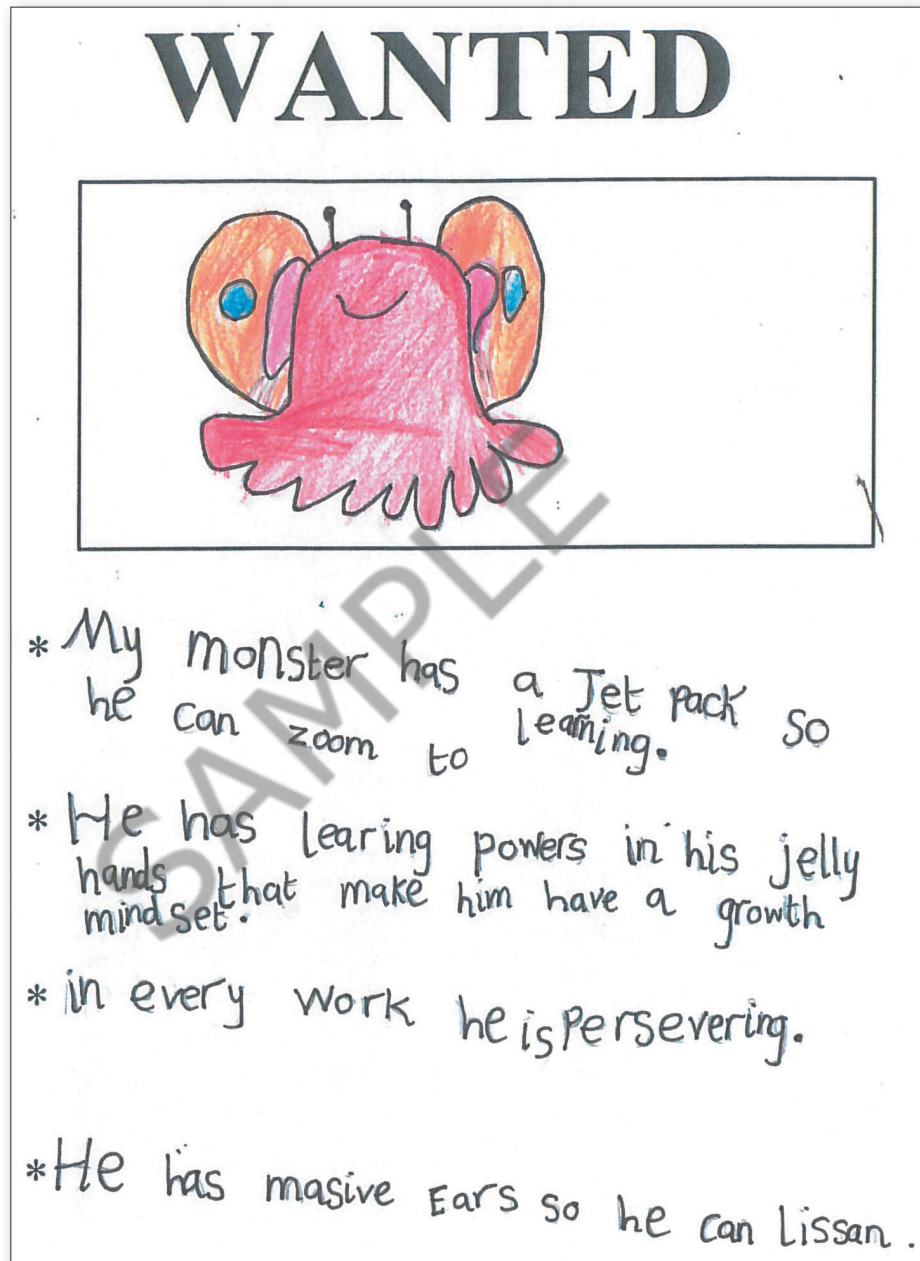


Figure 32 Wanted: Super Effort for learning

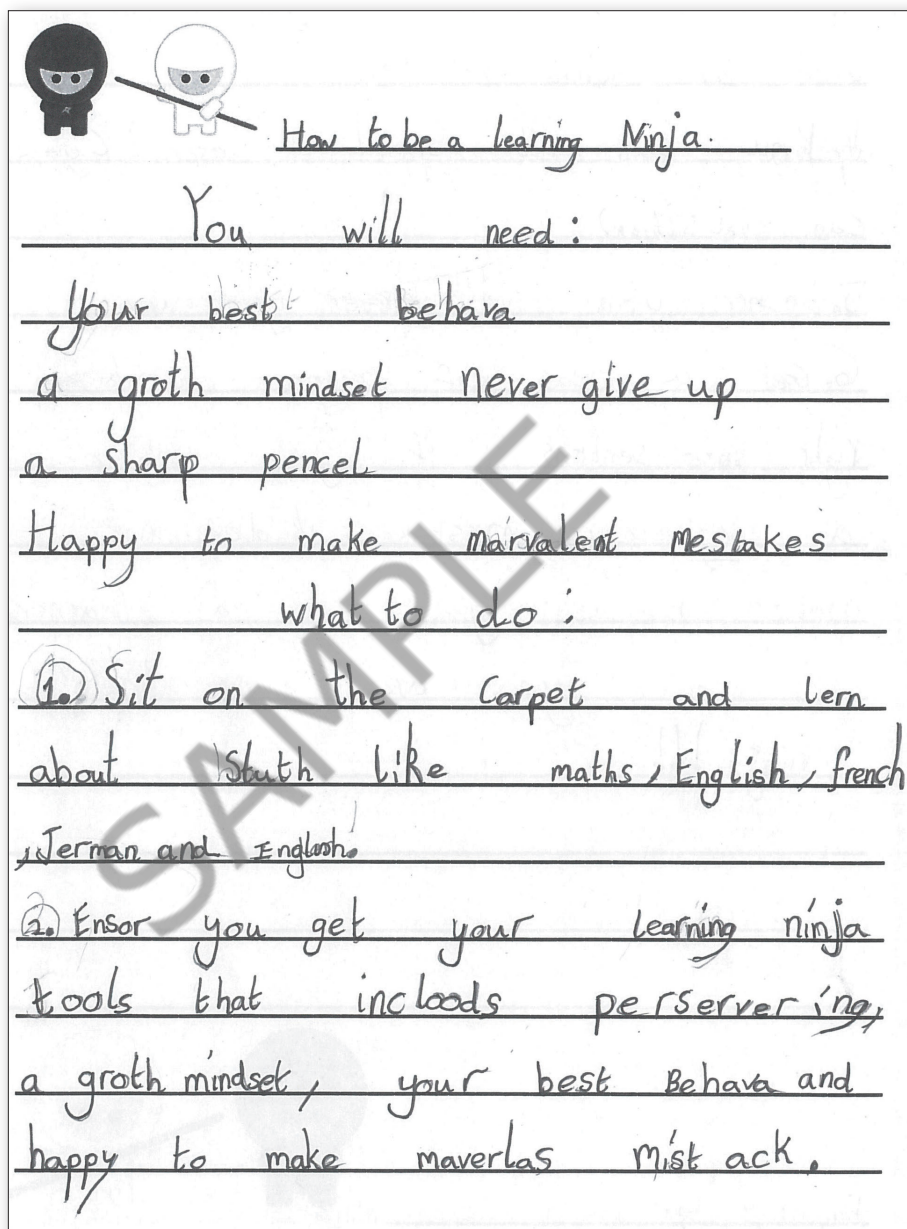


Figure 33 How to be a learning ninja

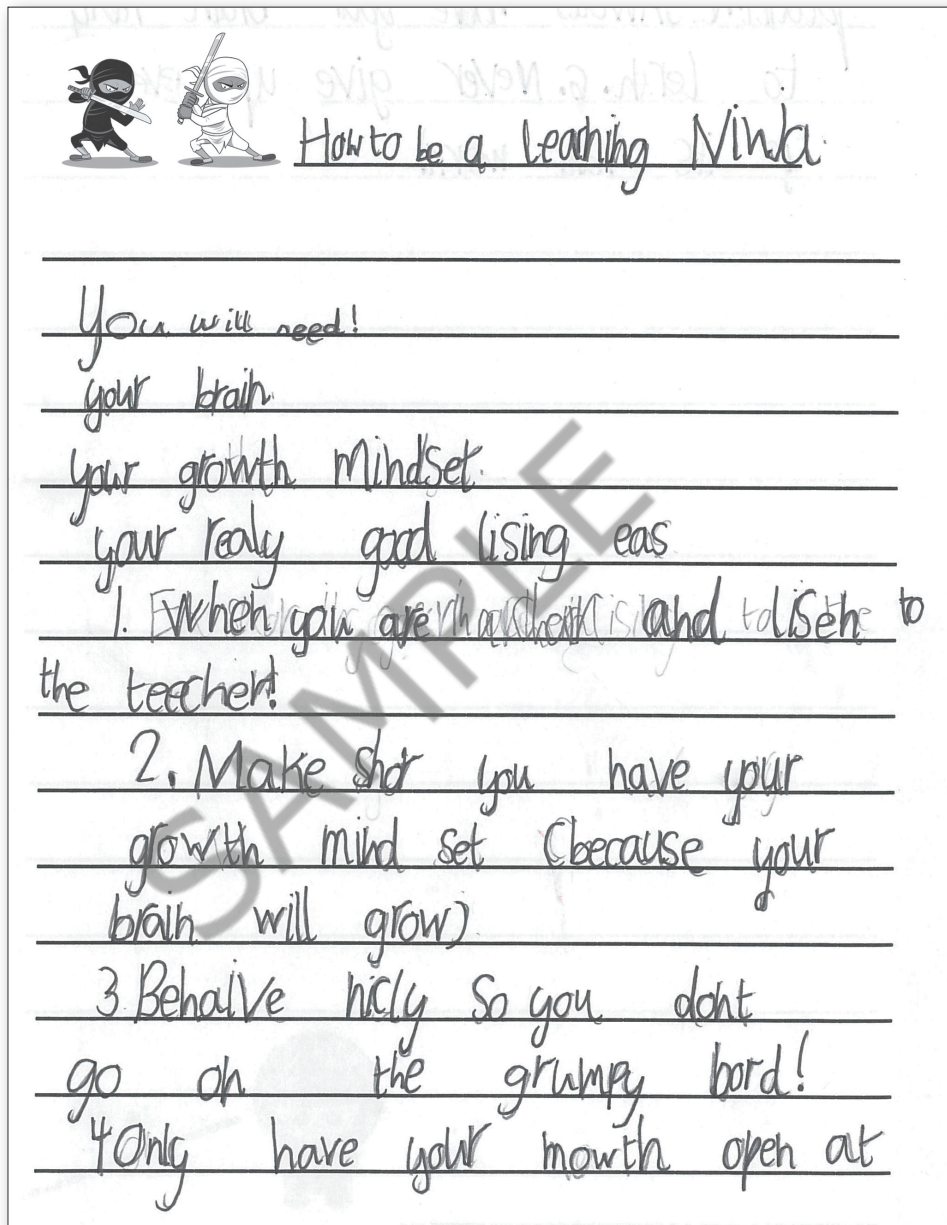


Figure 34 What you need to be a learning ninja (1)

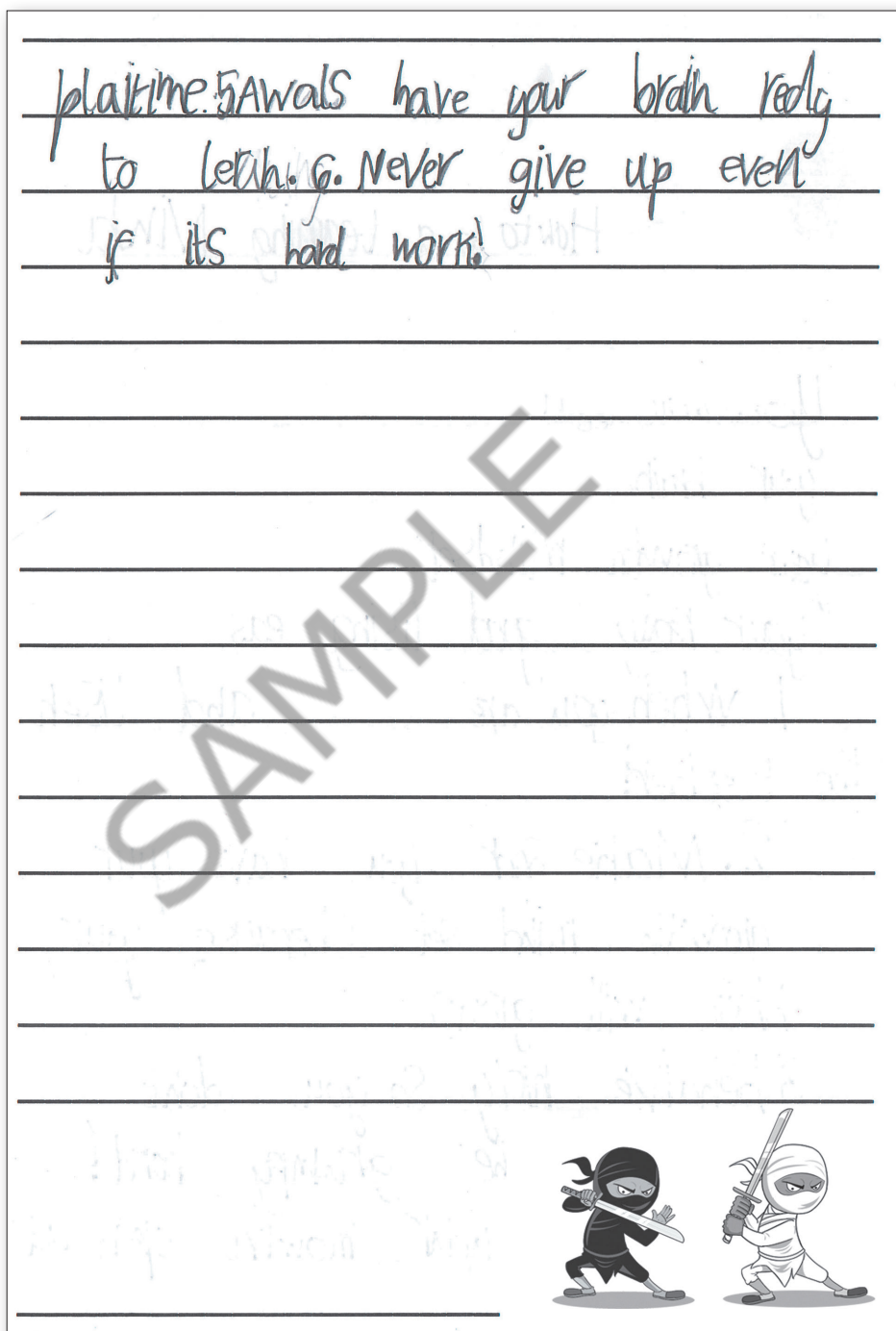


Figure 35 What you need to be a learning ninja (2)



Figure 36 SEF display

5 Challenge mountains

Learning objectives	Resources
<ul style="list-style-type: none"> To set a learning challenge To review their challenge and identify their progress 	<ul style="list-style-type: none"> Picture of a mountain (see Figure 37) Display board showing a giant challenge mountain (see Figure 38) Photographs of each child with speech bubbles (see Figure 39)

IB Learner Profile

- Reflective** – we work to understand our strengths and weaknesses.
- Risk-takers** – we are resourceful and resilient in the face of challenges.

Lesson

- 1 *Arrange the students so they are sitting with their talk partner and able to clearly see the board.*

Slowly reveal an image of a mountain (see Figure 37). It might be useful to use a spotlight tool to slowly reveal the image and hook the students. You can then ask:

What do you think this is a photograph of?

Why do you think that?

Ask the students to discuss the following questions with their talk partner:

What can you see?

Would you like to climb the mountain?

How would you feel?

Ask the students to feed back (select students to contribute at random, using lollipop sticks or an online resource such as the 'Random Name Picker' at www.classroomtools.net/random-name-picker/ or the 'Random Student Selector' at www.whyte.com/No%20Hands/).



Figure 37 A giant mountain



- 2** Develop the discussion further by posing the question:

How is learning similar to a challenging mountain?

Allow the students some thinking time and then ask them to discuss the question. During the discussions, you should use the strategy of ‘eavesdropping’. This is where you listen to the discussions and make a note of the students’ ideas. Then, rather than taking individual feedback, you share the ideas you gleaned from the discussions with the class.

It might be necessary for you to make explicit the link between learning and climbing a challenging mountain. You may need to explain that learning is like climbing a mountain: it can be challenging and you need to practise and have help to overcome the difficult parts.

■ Challenging myself!



- 3** Show the students the small pictures of themselves and the speech bubbles. Ask them to think about:

How can you improve as a learner?

What challenge would you set yourself?

It might be useful to model to the students how to phrase a learning challenge. For instance, you could use pictures of members of staff with their learning challenge written in a speech bubble. It is also extremely effective to use fictional characters that the students are familiar with: Horrid Henry, for example, would have the challenge of being willing to try to have a go at his learning.

Ask the students to set their own learning challenge, identifying a learning behaviour that they wish to improve. The students should then write this on their speech bubble (see Figure 39).

Reflection time – what have we learned?

The students place themselves on the whole-class challenge mountain (see Figure 38). As or when they feel (or the teacher feels) they are making progress, they should move up the mountain.

Ask the students to talk to their talk partner about what will help them to improve and move up the mountain and what might prevent them from learning.

Once the students reach the top of the mountain, they could set themselves a new challenge and discuss what helped them to improve.

Challenge

Ask the students to think about their learning challenge and to create ‘steps for success’ by breaking down the steps they need to take to achieve it.

Further developments

Using Adobe Spark Video (<https://spark.adobe.com/>), which is free to download, the students could review their learning and create a short film using photographs of their work before and after it has improved, with a voiceover explaining how it happened.

Ask the students if they can think of another image or method of explaining learning.

How would they illustrate this?

Students' responses

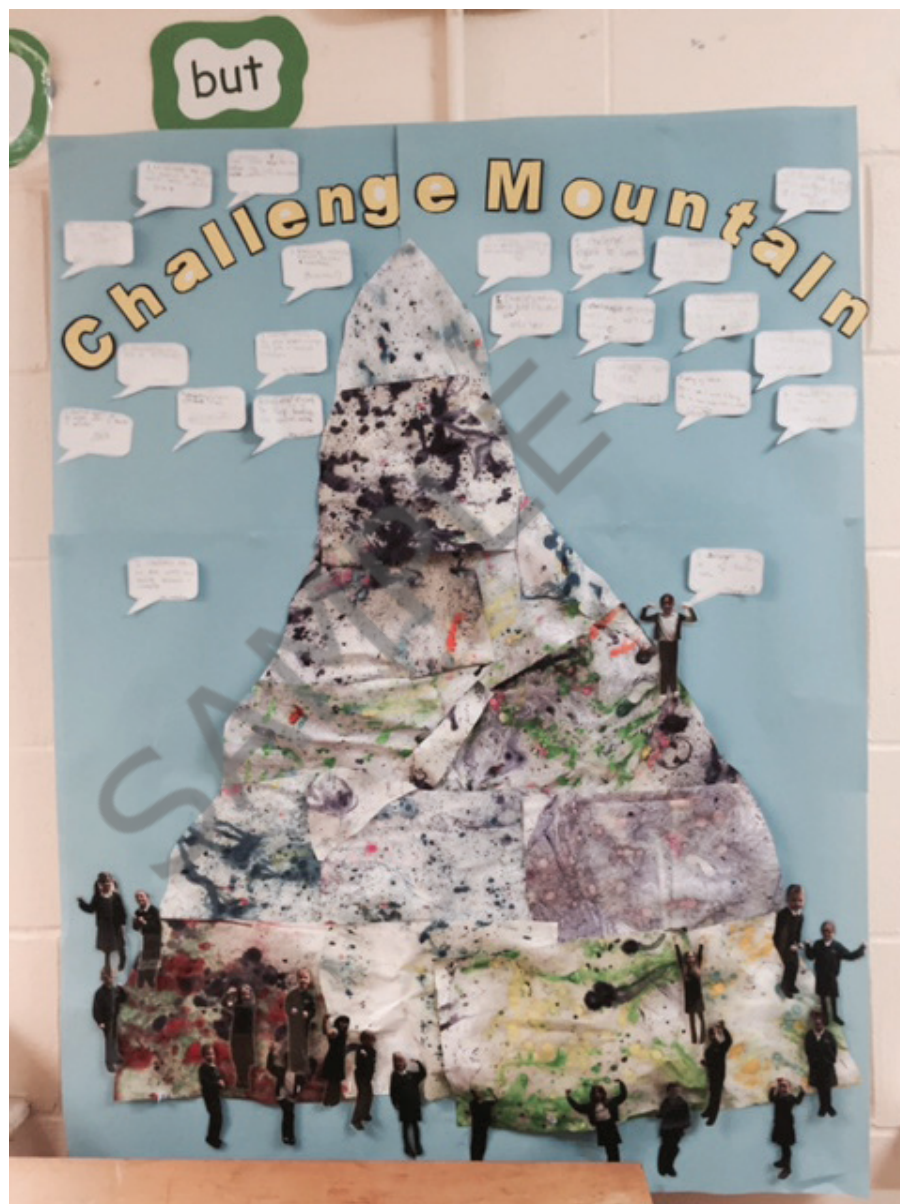


Figure 38 The challenge mountain

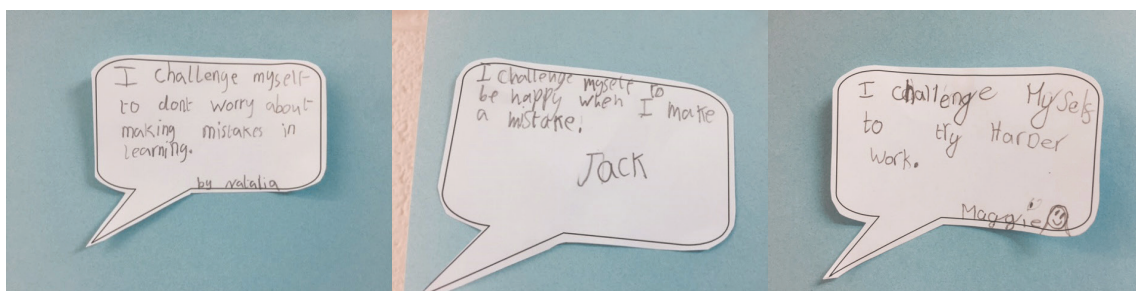


Figure 39 Personal challenges

■ An example of a student's alternative explanation of learning

'Learning in Colour Zones' by Alex aged 7:

'In the red zone you are frustrated and not learning. The next zone is orange, where you might begin to learn but it's not your best. Next is blue where you are swimming in the learning sea, with your head above water. Finally, there is the green zone like a grassy field in summer where everyone is happy and you are trying your best. There is a lot of learning and you are challenging yourself.'

DOWNLOADABLE RESOURCES

PowerPoint presentation: picture of a giant mountain
www.hoddereducation.co.uk/ib-extras

6 Ding ding! How much effort?

Learning objectives	Resources
<ul style="list-style-type: none"> To identify the different stages of effort To create their own effort meter 	<ul style="list-style-type: none"> Learning behaviours vocabulary cards (see Figure 40) Effort meter template (see Figure 41) Giant effort meter (like, for example, Figure 42)

IB Learner Profile

- Thinkers** – we use critical and creative thinking skills.
- Knowledgeable** – we develop and use conceptual understanding.

Lesson



- 1 *Ensure the students are sitting with their talk partner.*

Give each pair a set of the vocabulary cards of different learning behaviours (Figure 40).

Look at the behaviours and read them with the students and then ask them to read them back to you.

Ask the students to work with a talk partner to sort the cards into groups. Again, explain that there are no right or wrong answers. Once the discussions are under way, you should undertake the role of a learning facilitator. Listen to what the students are saying as it will reveal a lot about their attitudes to learning and their individual mindsets. Try not to intervene since allowing students to resolve issues with their talk partner is an important skill for them to develop. Again, you might wish to make a note of the students' responses to allow you to revisit misconceptions at a later point or share ideas through a display.

concentrating	challenging yourself	misbehaving	improving
giving up	responding to a challenge set by a teacher	persevering	practising

Figure 40 Learning behaviours vocabulary cards

- 2 Once the discussions are under way, you need to choose the right moment to intervene with an extension activity. This is always tricky, as you do not want to interrupt the students' discussion, but you need to ensure the learning continues to develop. Ask them to discuss:

Are there any other behaviours that could be added to your different groups?

Randomly select pairs of students to share their ideas.

■ Giant effort!



- 3 Show the students a giant blank effort meter that is divided into four colours (Figure 42 shows an example of a completed effort meter). Ask the students to match the different behaviours to the four different stages of effort. Again, extend the discussion further by asking the students:

Are there any other behaviours that could be added to your different groups?

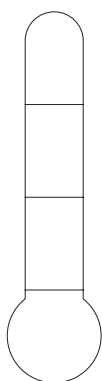


Figure 41
Template for an individual effort meter

Reflection time – what have we learned?

Students create their own individual effort meter using the template shown in Figure 41. They can then use this to reflect on their learning. They should personalize it and include their own learning behaviours for each stage.

Challenge

Ask the students to debate whether they always put the same amount of effort into their learning.

Further developments

Use the students' ideas to create a large effort meter for display. This can act as a visual prompt for learners, and both students and teachers could give feedback for the learning in the classroom.

During learning, ask the students to reflect on their effort and use their individual effort meters to share their perceptions.

As the students' learning develops, you could revisit the effort meter and add characteristics.

DOWNLOADABLE RESOURCES

- Learning behaviours vocabulary cards
- Template for an individual effort meter

www.hoddereducation.co.uk/ib-extras

Students' responses



Figure 42 Completed individual effort meter

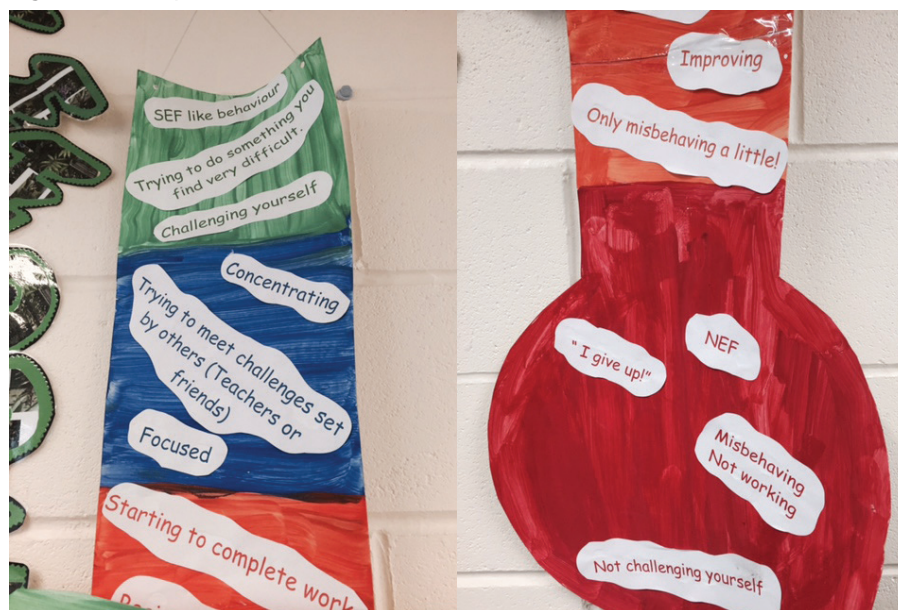


Figure 43 Close-up of individual effort meter

Growth Mindset

Every child a learner

Teaching for Success

Teach for success with this 'must-have' handbook for anyone looking to embed a growth mindset culture essential for supporting agency, physical and emotional well-being, and inquiry-based learning in the Primary Years Programme (PYP).

- Take the concept of growth mindset and turn it into a powerful reality with practical strategies, lesson plans and extensive examples developed by practising teacher and mindset expert Katherine Muncaster and co-authored by leading professional development expert, Shirley Clarke.
- Create a powerful and inviting learning environment throughout your school with detailed and practical advice to support the physical and emotional development of your students.
- Easy-to-access classroom video clips provide demonstrations of the impact of this approach in lessons.

About the authors

Katherine Muncaster is a headteacher, author and education consultant. She is passionate about developing every child as a learner.

Shirley Clarke (M.Ed., Hon.Doc) is a world expert in formative assessment, specializing in the practical application of its principles. Many teachers have worked with Shirley or read her books and, through them, the practice of formative assessment is continually evolving, developing and helping to transform students' achievements.

HODDER EDUCATION

e: education@bookpoint.co.uk

w: hoddereducation.com

ISBN 978-1-510-48116-9

