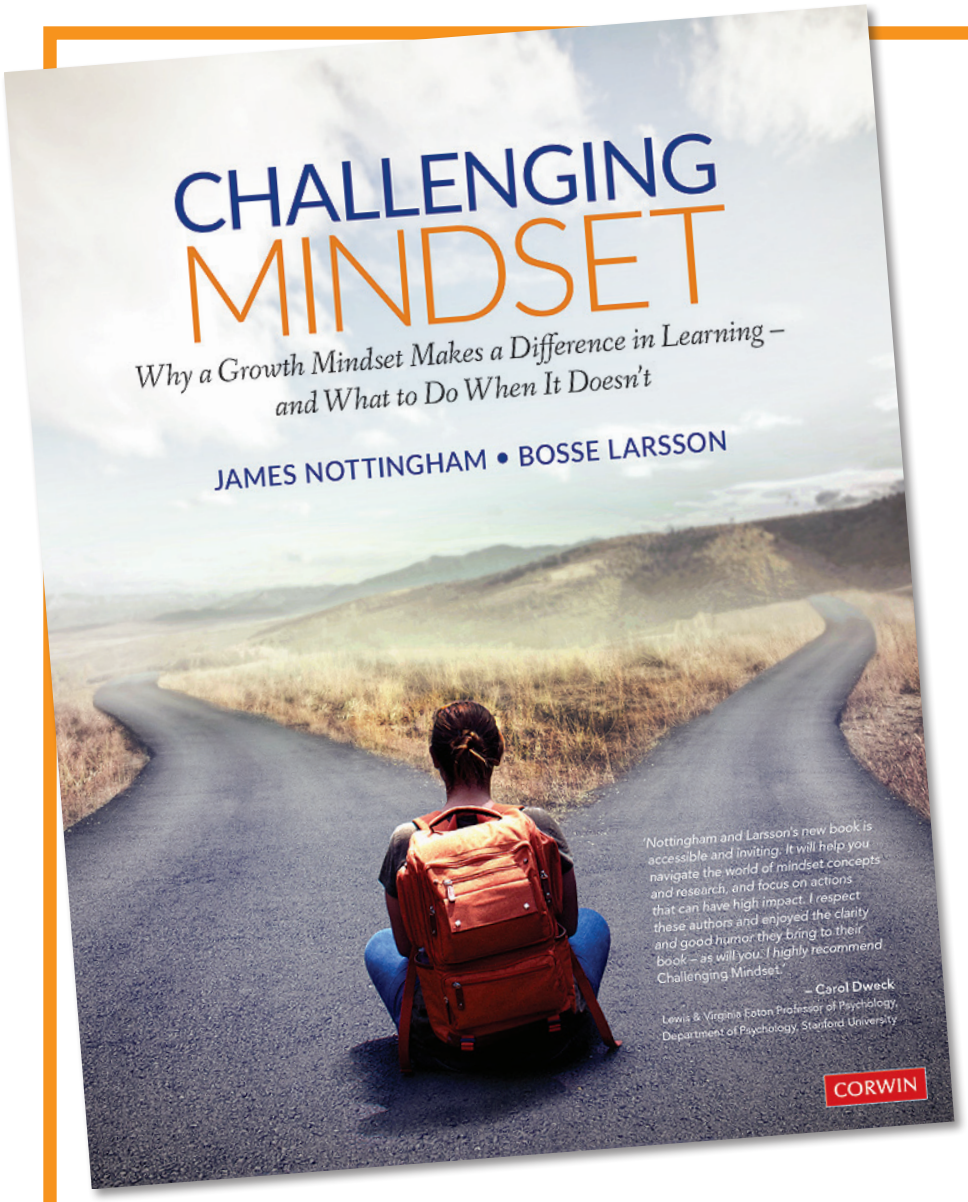


Thank you

FOR YOUR INTEREST IN CORWIN

Please enjoy this complimentary excerpt from *Challenging Mindset* by James Nottingham and Bosse Larson. Try out these lessons with your students, each designed to engage your students in cognitive conflict about some of the important concepts connected with mindset: influence, self-efficacy, heritability, development, challenge, resilience, and talent.

LEARN MORE about this title, including Features, Table of Contents and Reviews.

CORWIN

GROWTH MINDSET LESSONS

11

11.0 • LEARNING CHALLENGE LESSONS

The lesson activities in this chapter are designed around the Learning Challenge, the stages and aims of which are outlined in Section 8.3. You can read much more about the model in James's book of the same name published in 2017. You could also read *Challenging Learning Through Dialogue* by Nottingham et al. (2017) as this gives lots of techniques for deepening the learning within activities like the ones described in this chapter.

Each lesson has been designed to engage your students in cognitive conflict about some of the important concepts connected with mindset: influence, self-efficacy, heritability, development, challenge, resilience and talent.

You don't have to follow each lesson as if it were a recipe; feel free to pick and choose elements that will suit your students. The important thing is to use whatever will help to engage your students in exploratory talk, cognitive conflict, reasoning and justification.

We are very grateful to Mark Bollom, Jill Nottingham and Lorna Pringle for creating the main body of these lessons.

11.1 • HOW MUCH CAN EMILY INFLUENCE HER FUTURE?

AGE RANGE

8+

KEY CONCEPT

Self-efficacy.

The 'lessons' in this book are intended as inspiration for learning. They do not need to be followed to the letter. Instead, we encourage you to pick and choose the elements most suitable for your students.

KEY WORDS

Self-efficacy, effect and affect, actions, strategies, thinking, mindset, positive, resilience, practice, help, teachers, peers, homework, friends, family, planning, dreams, goals, well-being, intrinsic and extrinsic.

ANY PRIOR LEARNING NEEDED

Students should know the difference between 'effect' and 'affect'. Generally, 'affect' is the action of influencing something whereas 'effect' is the outcome of something. However, 'effect' can also be used as a verb to mean 'to create'. Both meanings of 'effect' are used in this set of lesson ideas. It would also be useful for your students to know the meanings of 'intrinsic' and 'extrinsic'.

LEARNING INTENTIONS

To know what 'self-efficacy' is, and to understand how it influences our lives.

SUCCESS CRITERIA

We can:

- Explain what 'self-efficacy' means and how it can influence our lives.
- Describe and analyse the difference between things that have an effect on us and the things that we are able to affect.
- Make judgements about how much influence Emily has over her future and support these judgements with reasoning.
- Identify the things we could do to have an influence on our own future learning and success.

STRATEGIES USED

Sorting and classifying.

Mystery.

1. • IDENTIFY IMPORTANT CONCEPTS

Some of the key areas to investigate within and around the concept of 'self-efficacy' are the following:

- the definition of efficacy
- the things we can do to effect (create) outcomes
- the role of challenge in becoming self-efficacious
- the role of others in the development of our own self-efficacy
- mindsets and self-efficacy
- the belief in potential, possibility and self-efficacy
- goal setting and self-efficacy
- the relationship between the three feedback questions shared in Section 10.2 (What am I trying to achieve? How much progress have I made? What can I do next?) and self-efficacy
- the role and use of feedback in developing self-efficacy
- the link between self-efficacy, self-confidence and self-esteem.

2. • CHALLENGE STUDENTS' UNDERSTANDING OF THE CONCEPT

Figure 53 gives examples of the sorts of cognitive conflict you should try to create in the minds of your students.

▶ Figure 53: Examples of Cognitive Conflict for Self-Efficacy

Opinion	Conflicting opinion
In order to master something, we need to have a high sense of self-efficacy.	The experience of mastering something leads to high self-efficacy.
I can do things to influence how much success I have in my life.	I'm stuck with being me and need to accept my limits.
I can get better at almost everything.	There are some things that no matter how much I try, I just never seem to get better at (e.g. algebra).
Being stuck is frustrating but I know that if I keep going, then eventually I will succeed. That success will make me happy.	Being stuck is one way to know my own limits. If I reassure myself that we can't all be good at everything then I feel happier.
I think that challenge is interesting and it helps me to grow and develop.	I like to choose easy things because that way, I'm never feeling uncomfortable.
I can't play a musical instrument but I think I could if I put enough effort into it.	I can't play a musical instrument and I don't think it matters how much effort I put in, I am never going to be able to do it.
I'm perfectly happy that I can't play a musical instrument.	I could never play a musical instrument. I'm just not musical. It's really frustrating.
You either have self-efficacy or you don't! I am just not that type of person.	Self-efficacy is constantly evolving as we get older. I am much more confident that I can achieve a place on the sports team now than I was last year.
Self-efficacy is essential to our success at something.	I have very low self-efficacy with language and yet I always get good grades.
Self-efficacy comes from your 'self'.	Self-efficacy is significantly influenced by the people around your 'self'.

Questions for Challenge

- How much influence can you have on what happens in your life?
- How much influence can other people have on what happens in your life?
- What things stop you having an effect on your life?
- Is it possible to be happy with yourself if you don't believe in yourself?
- What does the term 'self-efficacy' mean?
- How important is self-efficacy in determining our chances for success?
- How important is being successful to developing self-efficacy?
- Is it possible to develop self-efficacy without having an optimistic outlook?

By creating cognitive conflict in the minds of your students, you will encourage them into the learning pit (see Section 8.3) and thereby into deeper reflection about important concepts.

- What impact do role models have on our ability to develop self-efficacy?
- How essential is self-efficacy in knowing when to try and when to stop?
- What role does your intelligence have on how much you can affect what happens in your life?
- What role does your intelligence have on how much other people can affect what happens in your life?
- Who or what would persuade you that you couldn't improve?
- Why might it be important to know how you can improve?
- Can you improve something simply by putting more effort into it?
- When might it be okay to not want to improve?
- What are the similarities and differences between self-efficacy and self-confidence?
- What specific things can you do that will influence your life right now?
- What influence could you have on how much you learn from this lesson?

3. • CONSTRUCT UNDERSTANDING

Activity 1: Sorting and Classifying

Ask your students to work in pairs or small groups to sort through the activity cards shown in Figure 54. They should sort the cards three times.

1st sort: Things that have an effect on students in this school *versus* things that have no effect on students in this school.

2nd sort: Things that have an effect on students' learning *versus* things that have no effect on students' learning.

3rd sort: Things that students in this school can affect *versus* things that students in this school can *not* affect.

▶ Figure 54: Items to Sort and Classify

1. The colour of a teacher's car
2. Blackholes
3. Computers
4. Books
5. Pets
6. The colour of your teeth
7. How rich you are
8. Your teachers
9. Where you live
10. How clever you are
11. The weather
12. Knowing where you want to get to in life
13. Knowing what to learn
14. Knowing how to learn
15. Knowing what success looks like
16. Effort
17. Friends
18. Parents

19. Your pet's name
20. Mobile phones
21. Sleep
22. The full moon
23. The sun
24. Aliens
25. Sports results
26. Exercise
27. Your beliefs
28. Goldfish
29. Movies
30. The school you go to
31. Health
32. How tall you are
33. How old you are
34. Your handwriting
35. Your vocabulary

Activity 2: Mystery

Divide your students into groups of three to five. Print out the information shown in Figure 56, cut them into individual cards, then give each group a full set of cards.

Introduce the question: How much can Emily influence her future?

Then invite your students to sort through the cards. Do not give any other information at this stage. Part of the activity is for your students to solve the 'mystery' by themselves. If they ask clarification or procedural questions, then reflect those questions back by saying something such as, 'That's a good question. Can anyone think of a solution?'

Once your students have had enough time to read all the cards and to begin sorting them, pause all the groups and get them to report back to the whole class. Ask questions such as:

- What have you found out so far?
- Which pieces of evidence suggest that Emily can influence her future and which ones do not?
- How many irrelevant pieces of information have you found?
- What strategy are you using to sort through the cards?
- Are there any other ways you could sort through them?

Sometimes, it helps to give your students the table shown in Figure 55. This can help them to interpret and handle the information more effectively, and to reconstruct their thinking in order to reach an understanding. Do not give this out too early in the process. Make sure your students have had enough time to read and begin sorting first.

Adaptation

You could give your students half of the cards to begin with, and then the second half later. Or you could omit some of the more complex cards. You could also give the Consider Chart shown in Figure 55 earlier in the proceedings.

▶ Figure 55: Consider Chart for Emily Mystery

How Much Can Emily Influence Her Future?		
Information that supports the idea that Emily **can** influence her future.	Information that supports the idea that Emily **cannot** influence her future.	Information that doesn't help to answer the question.
Our conclusion is . . .		
The key reasons for this are . . .		

Extension

You could ask your students to rank a subset of the cards into those factors that make the most difference at the top of the rank, and those that make the least difference at the bottom of the rank. You could also ask each group to come up with three more 'clues' to pass on to other groups.

▶ Figure 56: Clues for the Emily Mystery

Emily is 10 years old.	Emily's new teacher spends a lot of time talking to her students about how to be successful learners.	Emily doesn't believe she's going to cope with the work when she moves up to secondary school next year.
Emily knows the reasons why she's improved so much at swimming.	Emily has an older sister called Sophie, who is 14.	Emily doesn't believe that she'll ever be successful in mathematics.
Emily saw the grades from a reading comprehension test on her teacher's desk. She hadn't done as well as some of her friends.	Emily is very good at swimming and also plays soccer.	Emily trains very hard at swimming: she listens carefully to her coach and spends time watching YouTube clips for advice and tips on how to improve her technique.

Emily heard her Dad say that Sophie has always been a Grade 'A' student.	Emily's teacher is looking forward to telling Emily how much she's improved since her last reading comprehension test.	At a parents' evening last year, Emily's previous teacher said that she wasn't as academically gifted as her older sister.
Emily knows that she learns best when she has an example to follow or step-by-step instructions.	Emily's friend Henry loves maths. He enjoys exploring problems. Emily can't believe it when he says that he actually enjoys getting stuck.	Emily wants to learn how to windsurf.
Emily is worried that if she isn't as successful as her sister, her parents won't be pleased with her.	Emily's Mum told her Dad that they are lucky to have two wonderful daughters and that it's fantastic that they are so different from one another.	Emily never wants to say an answer out loud in maths lessons in case she's wrong.
Emily's Dad had no sporting success as a child. He's delighted that Emily does so well in swimming competitions.	Sophie has already told the family that she'd like to be a medical doctor when she's older.	Emily doesn't like the fact that she finds herself working in different groups from most of her friends.
There is a maths club after school on Wednesday afternoons.	Emily's mum had to take her maths exam twice when she was at school so that she could do the course she wanted to do.	Emily's mum is a physiotherapist.
Emily's coach asked Emily to practise swimming 3 sets of 4 lengths at 80% of her normal speed.	Emily learned a way of working out percentages by copying down a method from the internet.	Emily doesn't think it's very important that she has developed a real talent for painting and pottery.
Emily's friend Josie writes poems. She asked Emily to draw some pictures so that she could put them with her poems and make a book.	Henry goes to maths club. He enjoys helping some of the younger students.	Emily's class teacher runs maths club. She says that she'd like it if Emily could come along.
To calculate a percentage of time Emily had to convert minutes into seconds.	Emily would like to help the swimming coach work with the very youngest children who come for lessons before her training session.	There are four major strokes in swimming – backstroke, breaststroke, butterfly and front crawl. Front crawl is used in freestyle races.
The other day, Emily explained to her class the process she follows for mixing paint. Henry said he realised where he had been going wrong.	Emily likes helping others but feels like she's being 'a pain' when she asks for help for herself.	Emily wishes she was good at what she believes are the important subjects at school.

4. • CONSIDER THE LEARNING JOURNEY

At the end of the activity, invite your students to think about the learning journey they have been on. This can include reflecting on their thinking, their strategy and what they could have done differently.

Remember to refer back to the learning intentions and success criteria, and to ask your students to consider how much progress they have made towards achieving these goals.

You could also ask some of these follow-up questions:

- In what ways can you affect your own life?
- Is believing that you can influence things important if you want to change?
- Do you want to have more or less effect on your future?
- Is it important to know what you want to improve?
- Can you name something you can do or think today that could have an effect on you in the future?
- How did you have an effect on how much you learned in this lesson?
- What actions could you take that will have an effect on your future as a learner?
- What will you remember from this lesson?
- What skills have you used during this lesson?
- What could you do with these skills and this learning?

Ideas for Transfer

You could ask your students to think about the cards in Figure 55 that would apply to all people, some people, only people in economically developed countries, only adults, only English-speakers, and so on.

11.2 • WAS USAIN BOLT BORN TO BE AN OLYMPIC CHAMPION?

AGE RANGE

10+

KEY CONCEPT

Mindset.

KEY WORDS

Mindset, Olympics, champion, growth, development, perseverance, determination, genes, nature, nurture, mental preparation, gifted, talented, dedication, sacrifice, fixed mindset, growth mindset, improvement, progress.

ANY PRIOR LEARNING NEEDED

It would be valuable for your students to watch some online video or access short biographical details about Usain Bolt. This should provide background information about Usain Bolt's achievements and his journey from childhood to multiple Olympic champion.

LEARNING INTENTIONS

To understand the factors that contribute to sporting success and the role that mindset plays in this.

SUCCESS CRITERIA

- Explore where talent comes from.
- Compare the attitudes and actions of a fixed mindset with those of a growth mindset.
- Identify how mindset influences our own progress and achievements.

STRATEGIES USED

Opinion Line.

Mystery.

1. • IDENTIFY IMPORTANT CONCEPTS

Some of the key areas to investigate within and around the concept of 'mindset' are the following:

- fixed mindset
- growth mindset
- nature versus nurture
- practice
- effort
- dedication
- determination
- resilience
- ambition
- progress and improvement
- limitations
- different starting points
- potential
- achievement
- self-esteem
- intelligence.

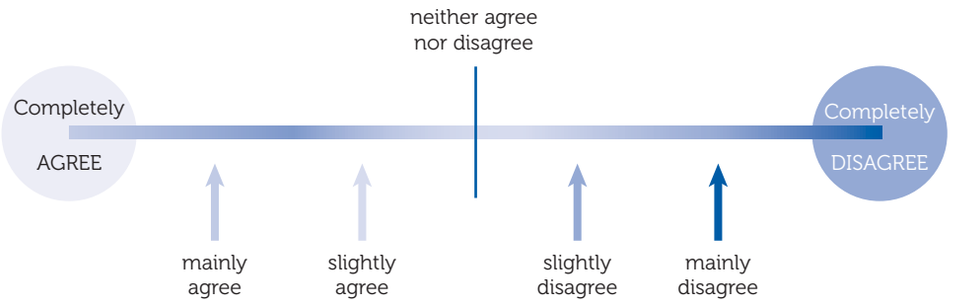
Activity 1: Opinion Line

To get your students thinking about the concepts shown, you could use an opinion line such as the one shown in Figure 57.

Ask your students to consider how much they agree or disagree with these statements:

- Olympic champions are *naturally* gifted.
- Olympic champions are *lucky*.
- To be an Olympic champion, athletes *have* to be in a growth mindset.
- Dedication, effort, training and ambition are all *necessary* to become an Olympic champion.

▶ Figure 57: Opinion Line of Olympic Success



2. • CHALLENGE STUDENTS' UNDERSTANDING OF THE CONCEPT

Figure 58 gives examples of the sorts of cognitive conflict you should try to create in the minds of your students.

Questions for Challenge

- Are some people born destined to be winners?
- Do talented people need to try?
- Do talented people need to learn new things?
- Do talented people have to be coached if they are to become champions?
- Can anyone become talented?
- Could I become men's/women's world 100-metre record holder?
- Could I become a better or more talented 100-metre runner?
- Is the current world record holder for the 100 metres the only person who has ever lived who could run the time he or she ran?
- When should you stop trying to improve?
- Is it wrong to give up on something you can't do?
- Is it ever right to give up on something you can't do?
- Can you give up on something and then return to it at a later date?
- Is failure a sign that you should give up?
- If we are talented at something, should we sit back and enjoy our own brilliance?
- When do you feel clever? Is it when you have mastered something or is it when you are being challenged?
- Is struggling a bad thing or a sign that you are engaged in a challenge?
- Is being challenged a bad thing?
- Are there some challenges you are 'up for' and others that you are not? Is this okay?
- How do you feel when you see someone who is already very talented?
- Is there a talent you would like to have but that you currently don't? What is the evidence that you don't already have it?
- When someone is critical about your performance, do you find it difficult to carry on learning or do you use it as a source of inspiration?

- When you are learning and want to get better at something, should you focus on the improvement you've made or how far you still need or want to go (or both)?
- In terms of our own progress and growth, does it help to know that most 'geniuses' or people that are called 'gifted' have put in (sometimes) thousands of hours of work to get where they are? Or does the knowledge that it takes so long put you off trying?
- Do you like the idea of success without effort? Is that a realistic scenario?

▶ Figure 58: Examples of Cognitive Conflict for Usain Bolt Mystery

Opinion	Conflicting opinion
Some people find things easy.	There is no such thing as 'easy'.
Usain Bolt's success comes from his physical superiority.	Usain Bolt's success comes from training, dedication, effort, technique *and* physical superiority.
Everyone can improve if they train hard enough.	I could dedicate my whole life to training and still not beat Usain Bolt.
I'm naturally good at some things and naturally bad at other things.	I am much better than I used to be at some things and much worse at other things.
Being told that I can improve anything I want to is very reassuring.	Being told that I can improve anything I want to stops me from relaxing because it makes me feel I should get on with improving.
Watching Usain Bolt run a race is inspiring.	Watching Usain Bolt run a race makes me feel lazy.
Usain Bolt is so famous because he smashed the 100-metre world record.	Usain Bolt is so famous largely because of his enigmatic personality.
Talent has made Usain Bolt a household name.	The media has made Usain Bolt a household name.
Usain Bolt is lucky.	Usain Bolt has worked hard to be where he is today.

3. • CONSTRUCT UNDERSTANDING

Activity 2: Mystery

Divide your students into groups of three to five. Print out the information shown in Figure 60, cut them into individual cards, then give each group a full set of cards.

Introduce the question: Was Usain Bolt born to be an Olympic champion?

Then invite your students to sort through the cards. Do not give any other information at this stage. Part of the activity is for your students to solve the 'mystery' by themselves. If they ask clarification or procedural questions, then reflect those questions back by saying something such as, 'That's a good question. Can anyone think of a solution?'

Once your students have had enough time to read all the cards and to begin sorting them, pause all the groups and get them to report back to the whole class. Ask questions such as:

- What have you found out so far?
- Which pieces of evidence suggest that Usain Bolt can influence his future and which ones do not?
- How many irrelevant pieces of information have you found?
- What strategy are you using to sort through the cards?
- Are there any other ways you could sort through them?

Sometimes, it helps to give your students the table shown in Figure 58. This can help them to interpret and handle the information more effectively, and to reconstruct their thinking in order to reach an understanding. Do not give this out too early in the process. Make sure your students have had enough time to read and begin sorting first.

Adaptation

You could give your students half of the cards to begin with, and then the second half later. Or you could omit some of the more complex cards. You could also give the Consider Chart shown in Figure 58 earlier in the proceedings.

Extension

You could ask your students to rank a subset of the cards into those factors that make the most difference at the top of the rank, and those that make the least difference at the bottom of the rank. You could also ask each group to come up with three more 'clues' to pass on to other groups.

▶ Figure 59: Consider Chart for Usain Bolt Mystery

Was Usain Bolt Born to be an Olympic Champion?		
Information that supports the idea that Bolt was born to be an Olympic champion.	Information that supports the idea that Bolt has had to work hard to become an Olympic champion.	Information that doesn't help to answer the question.
Our conclusion is . . .		
The key reasons for this are . . .		

▶ Figure 60: Clues for the Usain Bolt Mystery

'Champions have a strong will to win and are highly competitive – they hate to lose'. Bill Cole, Olympic sports psychologist	'Champions have the courage to risk failure on an international stage'. Bill Cole, Olympic sports psychologist	Less mentally prepared athletes focus on the outcome aspects of their event: 'What will people think if I lose? or 'It would be awful if I let my coach down'.
'You can have all the natural talent in the world but there's no substitute for hard work'. Mo Farah, double Olympic gold medal winner at 5,000 metres and 10,000 metres	'Champions only focus on what they can directly control'. Bill Cole, Olympic sports psychologist	Champions sacrifice more, work harder, control their mind and emotions better, and have a deeper desire for success'. Bill Cole, Olympic sports psychologist
'Champions succeed because they have inner qualities others do not possess and they behave differently.' Bill Cole, Olympic sports psychologist	'Champions are committed to continuously developing their potential'. Bill Cole, Olympic sports psychologist	'Champions have an extreme amount of perseverance and determination to succeed'. Bill Cole, Olympic sports psychologist
In a growth mindset, you believe that abilities are grown.	In a fixed mindset, you believe that abilities are fixed.	In a growth mindset, you seek out challenge.
In a fixed mindset, you avoid challenge.	In a fixed mindset, you try to prove what you can do.	In a growth mindset, you try to improve.
In a fixed mindset, you hide your mistakes and avoid situations that might lead to you making mistakes.	In a growth mindset, you examine and learn from your mistakes.	In a growth mindset, you seek out feedback.
In a fixed mindset, you view feedback as criticism.	Christophe Lemaitre is a French sprinter. He became the first (and only) white man to break the 10-second barrier in an officially timed 100-metre event in 2010.	No African or Caribbean nation has ever hosted the Olympic Games.
'I train for 11 months of the year, six days a week'. Usain Bolt	'It's hard work, sweat and sacrifice. I've sacrificed so much throughout the season, throughout the years. I've been through so much'. Usain Bolt	'World juniors made me who I am today . . . It was one of the toughest races of my life up to this day. I was so nervous running in front of my home crowd'. Usain Bolt
'Training gives you confidence and this helps your state of mind. I know if I'm in good shape it's going to be very hard to beat me, this confidence is very important in performing well'. Usain Bolt	Bolt is a Jamaican-born athletic sprinter, and was born on 21 August 1986 in Trelawny, Jamaica.	Usain Bolt stated, 'there was still room for improvement', even though he won the 100 metres at the Olympic Stadium in 2013.
'You could see this tall young boy – just raw natural talent', remembers Lorna Thorpe, who was then head of sport at the school where Usain Bolt was a student.	Bolt wasn't particularly interested in sprinting. As a child he loved playing football and cricket with his brother.	Jamaica (with a population of just 3 million) has won 14 Olympic gold medals, with many of them in sprinting.

(Continued)

(Continued)

'I've proven that I'm the greatest in this sport and, for me, it's mission accomplished'. Usain Bolt	Bolt made his Olympic debut as a 17-year-old at Athens 2004, where he went out in the opening round of the 200 metres because of a hamstring injury.	Bolt became the first man in history to defend both the 100-metre and 200-metre Olympic sprint titles.
'He has lots of fast twitch muscle fibres that can respond quickly, coupled with his vast stride is what gives him such an extraordinary fast time'. John Barrow, Cambridge University	By the age of 12, Bolt had become the school's fastest runner over the 100 metres distance.	Bolt has raised and donated over $3 million to his hometown of Sherwood Content.
125 sprinters have run the 100 metres in under 10 seconds.	'I'm confident that I'm going to win, but I never think, "No one can beat me"'. Usain Bolt	Bolt received a bronze medal in the 2017 World Athletics Championships.
Bolt paid over £10,000 to adopt an abandoned cheetah cub – named Lightning Bolt – in Nairobi, and continues to pay £2,300 a year to pay for its upkeep at the orphanage.	Bolt owns a restaurant in Jamaica.	'I wouldn't say I'm a phenomenon, just a great athlete'. Usain Bolt
'There you go. I'm the greatest'. Jamaican sprinter Usain Bolt speaking after his 'triple triple' of golds in the 100 metre, 200 metre and 4 × 100 metre relays.	'You have to find that one thing that you know is going to motivate you. You might not enjoy training for example but you have to love competing and winning'. Usain Bolt	Bolt's height is 6 feet 5 inches whereas his competitors tend to be 6ft 2 inches and lower.
'If I start like that in the world championships I will probably finish fifth. I need to work with my coach and figure out how to be more explosive out of the blocks and not so slow'. Usain Bolt reflecting after one of his races in 2013.	He became the youngest gold medallist at the Junior World Championships when he was only 15 years old.	In 2009, Bolt became the world record holder in both the 100 metre (9.58 secs) and the 200 metre (19.19 secs) races.

4. • CONSIDER THE LEARNING JOURNEY

Revisiting the opinion line in Figure 56, and using the same statements recommended in Activity 1, can be a good way for students to reflect on how or if their thinking has changed or evolved.

After that, get your students to refer back to the learning intentions and success criteria, and ask them to consider how much progress they have made towards achieving these goals.

You could also ask some of these follow-up questions:

- What do you understand now about mindsets that you didn't before?
- Has anything you've read or heard in this lesson challenged your thinking, understanding or perspective on the concept of mindsets?
- What are the implications of the understanding you've developed?
- Have the perspectives of others over the course of this lesson been significant?
- What shaped your opinion in relation to the mystery element of this lesson?
- In terms of your life ahead, what does your understanding of and thinking about growth and fixed mindsets mean to you?

Ideas for Transfer

You could ask your students to research biographical details for other high achievers in the world of sport, the arts, business and so on. They could then present their findings to each other, under the heading of: 'Were they born with their talent or did they develop it?'

11.3 • IS CHALLENGE INTERESTING?

AGE RANGE

9+

KEY CONCEPT

Challenge.

KEY WORDS

Challenge, easy, boring, interesting, wobble, difficult, resilience, collaboration, effort, strategy, journey, excitement, risk, reward, progress, physical, physiological, emotional, psychological, curiosity.

ANY PRIOR LEARNING NEEDED

No prior learning is necessary although it would help your students if they are familiar with the concept and language of challenge.

LEARNING INTENTIONS

To understand how challenge is a key component of learning and development.

SUCCESS CRITERIA

- Classify types of challenge.
- Question the value and impact of challenge.
- Evaluate the relationships between things being challenging, interesting, easy or boring.
- Describe the role of challenge in cognitive, physical and emotional development.
- Reflect on how to use and respond to challenge in the future.

STRATEGIES USED

Venn Diagram.

Concept Graph.

1. • IDENTIFY IMPORTANT CONCEPTS

Some of the key areas to investigate within and around the concept of 'challenge' are the following;

- a definition of challenge
- types of challenge
- responses to challenge
- challenge and resilience
- challenge and strategy
- challenge and effort
- challenge and reflection
- challenge versus peril
- challenge and learning
- cognitive conflict
- physical/physiological challenge
- emotional/psychological challenge.

Activity 1: Different Challenges

To get your students thinking about the concepts shown, you could divide everyone into smaller groups (between four and six people per group). Then, using large sheets of paper, each group could draw an outline of a person and add descriptors for every challenge that this person might face in their lives. If your students draw arrows from each descriptor to the relevant part of the body that would be affected by that particular challenge, then this would add another dimension to the task. For example, if they thought of the challenge of running a hard race then they might draw arrows to their heart, lungs and legs.

To get your students started, you might like to give them one or two suggestions from the list below:

- The environment (hot/cold/rain/wind)
- Sensory (smells/sights/tastes/touch/sounds)
- Feelings (fear/sadness/loss/anxiety/excitement/impatience/ambition/enthusiasm)
- Physical activity (running/walking/swimming/cycling/working/fighting/lifting/carrying)
- Health (disease, old age, puberty, illness)
- Disability (various)
- Cognitive activity (ideas/concepts/information/opinions/problem solving/seeking solutions).

For every challenge your students think of, encourage them to think of an associated situation that would make it challenging. For example, if they say 'sound' could be challenging to the ears then they could give the situation of someone screaming close by or the sound of fireworks scaring animals.

Also encourage your students to think about these questions for each of the challenges they think of:

- In what way is this challenging?
- Would this *always* prove challenging?
- When might this not be challenging?

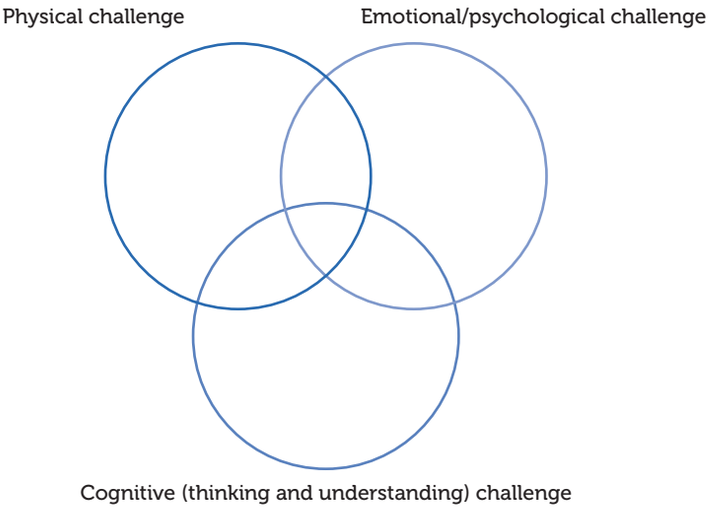
Activity 2: Venn Diagram

Print out the information shown in Figure 61, cut them into individual cards, and give each group a full set of cards. Then continuing to work in the same groups, invite your students to sort the cards shown in Figure 61 into the Venn diagram shown in Figure 62.

▶ Figure 61: Different Forms of Challenge

1. Hot	2. Cold	3. Rain
4. Wind	5. Smell	6. Sights
7. Taste	8. Touch	9. Sound
10. Fear	11. Sadness	12. Loss
13. Anxiety	14. Running	15. Walking
16. Swimming	17. Carrying	18. Disease
19. Old age	20. Illness	21. Puberty
22. Blindness	23. Amputation	24. Sore throat
25. Ideas	26. Information	27. Opinions

▶ Figure 62: Using a Venn Diagram to Sort and Classify Examples of Challenge



2. • CHALLENGE STUDENTS' UNDERSTANDING OF THE CONCEPT

Figure 63 gives examples of the sorts of cognitive conflict you should try to create in the minds of your students.

Questions for Challenge

- What does the term 'challenge' mean?
- What does it mean to be challenged?
- What has been the most challenging thing you have done?
- How does challenge make you feel?
- Is challenging the same as difficult?
- What is the difference between something being challenging and something being difficult?
- Does anything good come out of being challenged?
- What are the positive outcomes of being challenged?
- What negative outcomes might there be to being challenged?

▶ Figure 63: Examples of Cognitive Conflict When Thinking About Challenge

Opinion	Conflicting opinion
Why take the challenging option when there's an easy route available?	The challenging route will be much more interesting and rewarding.
The easy route will be better.	The easy route will be boring.
I don't want to have to think. Just tell me what I need to know.	I'll understand something a lot better if I have to think about it.
I'm not very interested in this topic, so I may as well take a short cut.	If it is challenging, then it will make me think and therefore it might become more interesting.
If it's physically challenging, then I'll get fitter and stronger.	If it's physically challenging, then I'll get tired and my body will hurt.
I should avoid challenges that might make me worried.	Emotional challenges will always happen, so I may as well learn to deal with them.
Challenge allows us to see what we are capable of.	Challenge highlights our weaknesses.
We should embrace challenge and use it to our advantage.	Some challenges are beyond our reach and leave us feeling out of control.
With challenge comes reward. I get a great sense of achievement when I complete something that has been particularly challenging.	If I go for the easy option I am more likely to get the reward of a good grade, or the praise and approval of others.
There is nothing wrong with taking short cuts to get to the end point quicker.	If I take the short cut, then I will miss out on an experience and all there is to gain from that.

- Is there a time and a place for things being easy? When might it be preferable for things to be easy?
- What if everything in life was always easy?
- What if everything in life was always challenging?
- Is it ever possible to reach a sense of achievement if no challenge is involved?
- Can people cope with being challenged all the time? What effect might constant challenge have on people?
- What are the benefits of cognitive challenge?
- What might the benefits be to emotional challenge?
- How can we make the cognitive areas of our lives interesting?
- How can we make the emotional areas of our lives easy?
- If challenge is always interesting does that mean that easy is always boring?
- How could something be boring and challenging at the same time?
- How significant is it that things are interesting in the physical areas of our lives?
- What would you judge as being most important and why: physical, emotional or cognitive challenge?

3. • CONSTRUCT UNDERSTANDING

Activity 3: Concept Graph

Now split your students into groups of two or three. Print out the information shown in Figure 64, cut them into individual cards, then give each group a full set of cards. Invite your students to place the cards shown in Figure 64 into the Concept Graph shown in Figure 65. When redrawing the concept graph, make sure it is big enough for your students to place the cards into the relevant section. Encourage your students to justify and explain their decisions to each other.

Questions to Extend the Concept Graph Activity

- To what extent are learning tasks more or less interesting when they are challenging?
- When is challenge most interesting?
- When can easy be interesting?
- When is easy most boring?

Adaptation

You could give your students half of the cards to begin with, and then the second half later. Or you could omit some of the more complex cards.

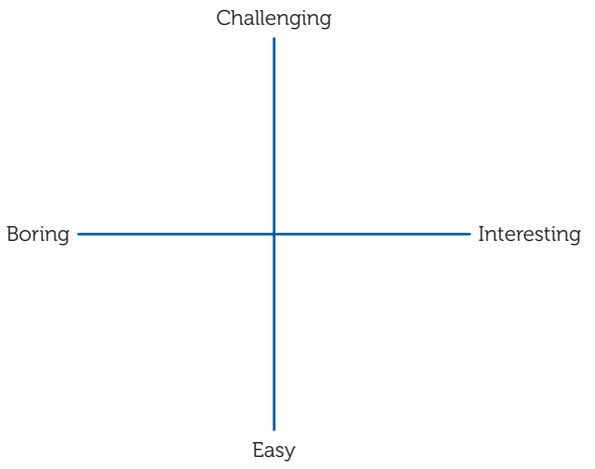
Extension

You could ask your students to rank a subset of the cards in Figure 61 or 64 into those factors that are most challenging at the top of the rank, and those that are least challenging at the bottom of the rank. You could also ask each group to come up with three more situations that they think are very difficult to classify, and then pass these on to other groups.

▶ Figure 64: Challenging Situations to Place on a Concept Graph

1. You are going to spend two hours helping a parent with the weekly grocery shopping.	2. You have a maths problem to solve which will enable you to work out how many bottles of lemonade and packets of crisps you need to buy for your birthday party.
3. You've been punished and have to write your name and address out 20 times.	4. You need to get past the dragon on level 3 of the video game so that you can enter the next kingdom and find more treasure.
5. You are having a sleepover that involves camping. You and your friends must put up your own tent and cook your own dinner.	6. You are learning to count in French, Spanish, German and Italian.
7. You score lots of penalty goals past your friend's little brother who is in goal.	8. You score a penalty past your friend's big brother who is a goalie in the school team.
9. You spend a whole topic lesson copying a chapter from a book.	10. You use textbooks and the internet to find answers to difficult questions in a topic.
11. The person who sits next to you in science gives you the answers to everything.	12. You wait at an airport for 6 hours because your flight home is delayed.
13. You hike to the top of a mountain.	14. You watch an exciting match, but your team loses in the last minute of the game.
15. You watch a film documentary about the terrible experiences of a small child during World War II.	16. You've got two great ideas but they contradict each other.
17. You feel ill but you don't want to miss a day of your holiday.	18. You have a test at school next week, you have a very poorly close relative and you have to tell your parents that you've lost your mobile phone.
19. You watch the latest animated film at the cinema.	20. In PE you are practising for a race by running around the field three times.

▶ Figure 65: Concept Graph for Challenge



4. • CONSIDER THE LEARNING JOURNEY

At the end of the activity, invite your students to think about the learning journey they have been on. This can include reflecting on their thinking, their strategy and what they could have done differently.

Remember to refer back to the learning intentions and success criteria, and to ask your students to consider how much progress they have made towards achieving these goals.

You could also ask some of these follow-up questions:

- What does challenge mean?
- What are the positive outcomes of being challenged?
- What negative outcomes might there be to being challenged?
- What are the best conditions for challenge?
- Which areas of our lives benefit the most from challenge?
- Which areas of our lives benefit the least from challenge?
- What is the connection between something being interesting and something being challenging?
- How much does the level of interest achieved depend upon the level of challenge?
- When is it a good option to be bored?
- What questions do you still have about the concept of challenge?
- What conclusions have you drawn in this lesson about the concept that you could explain to someone else?
- In what ways might your response to challenge be affected going forward?

Ideas for Transfer

Your students could do a self-audit of all the ways in which they've been challenged in the previous week and consider what sort of challenge it has been (cognitive/emotional/physical).

Your students could explore the structure of Bloom's taxonomy and look at how this describes increasingly complex levels of development in cognitive, psychomotor (physical) and affective (emotional) domains.