2.1 Perceptions checks: Mathematics

Give a double-digit multiplication, say 23 x 34, and ask:

- What does this mean?
- What’s an answer that’s too large/too small/close to the answer?
- How could we try to work it out?
- How many different ways could we calculate this?

2.1 What’s YOUR big question?

Keep a box in the classroom where students can put in BIG questions they want to seek answers to, eg:

- Does a frog know it’s a frog?
- If you had a different name, would you be a different person?
- Is it possible to hold a ‘fair’ race?

Then, in groups of 4, students choose a question to investigate. Allocate an amount of time to do this, eg all they can find in 30 minutes. Each group shares their findings with the rest of the class.

2.1 Perspective detective

What is an event or issue that has been reported in the news this week?

Form a group of 3 or 4.

- Think of a different perspective for each person to take on this current event or issue.
- Explain the event or issue from the perspective you are representing.
- What would your perspective be if you were from a different cultural group? eg Refugee perspective/Aboriginal perspective.

2.1 Convince me

Read any sentence from any non-fiction book.

- Convince someone that it is true.
- Convince someone that it is not true.
- Convince someone that it could be true in some situations but not others.
- Convince someone that it could be true for some people but not for others.
- Convince me using another’s standpoint or view.

Language that teachers can use to develop democratic relationships

- What do you think?
- We value your opinion.
- What other perspectives might there be?

TfEL Framework guide, p30

Adapted from Ways to … strategy: Student-initiated challenges

Establish opportunities for students to work strategically together to achieve a common goal (eg online games, team technology tasks or physical games where students think, plan and act together). TfEL Framework guide, p30

Perspective detective

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TfEL Framework guide, p30

Adapted from Ways to … strategy: Perception checks

Regularly stop the class group and ask ‘Has anyone found another way to do this?’ or ‘What would happen if we added …?’ or ‘Has anyone identified an issue with this idea?’ TfEL Framework guide, p30
**TfEL Element 2.2**
**Build a community of learners**

### Key actions: Teachers
- **Chronological order**
  - Arrange yourselves as a group or class in chronological order of:
    - your birth date
    - when you started at the school
    - when you lost your first tooth
    - when you learnt to ride a bike.
  - How many other ways could the groups arrange themselves?

### Key actions: Students
- **Before I met you**
  - Form pairs or small groups.
  - What do you know about each person? What have they helped you to learn?
  - Before I met you, I didn’t know …
  - Now that I know you, …
  - Share something that is unique to your culture.

### Key actions: Teachers
- **What if?**
  - What if a kangaroo came into the classroom?
    - List what you think would happen.
    - Share your funniest/craziest/scariest idea with the class.
    - What did you learn about yourself/your peers from this activity?

### Key actions: Students
- **What’s your plan?**
  - You have to entertain 10 kids for 4 hours. You get $100 to spend at an office supply store. What’s your plan?
    - Form a group of 3 or 4 and formulate a plan.
    - Share your plan with the rest of the class.
    - Post the plans on the wall and do a walk around to vote which you would choose.
    - Which plan received the most votes? Why?
    - What is important to think about when solving a problem with a group?
    - How does an office supply store limit your choices?
Where to next?

Ask students to reflect on what they are learning.

- Discuss what they would like to do with that learning, ie what is the next step for them?
- How might they apply this learning to something they want to do?
- Students decide whether they want to work by themselves or with others.

Key actions: Teachers

Progressively move from more prescriptive learning activities to student-led activities.

TfEL Framework guide, p37

Suggestion box

How could we learn how to:

- skydive
- build a website
- bake a mud cake
- play a guitar
- train an elephant
- fly to Mars.

Add your suggestions to the suggestion box.

Key actions: Teachers

Remember the power of interest – what they bring with them as they walk in the door and what I generate with them: both are key to engagement and persistence in learning.

TfEL Framework guide, p37

Domino learning chain

What is a skill you would like to learn or improve?

- How will you go about learning or improving this skill?
- What are the steps?
- Use a chain of dominos to show how the steps in your plan will lead to you achieving this goal.
- Who do you think you could learn more from about the skill you have chosen?

Key actions: Teachers

Set my own learning goals, with the support of my teachers or peers.

TfEL Framework guide, p37

Learning logs

Each student has a learning log.

- Allow regular time for students to reflect in their learning log – can be written, pictorial, symbols, etc.
- Provide some guiding starters eg:
  - I now feel confident about ...
  - Now I would like to ...
  - I am going to investigate ... because ...
  - I felt confused when ... so I am going to ask ... to help me
  - I do my best thinking when ...

Key actions: Teachers

Establish ongoing procedures to engage students in goal setting, planning, self-monitoring, critical reflection and evaluation.

TfEL Framework guide, p37
Everyone struggles
Helps learners see that even the greatest thinkers struggled. Do a Google search for a ‘famous’ person who has excelled in their field.
• Research what their ‘struggles’ were in achieving their goals. How did they overcome them?
• Think of yourself. What has been your biggest struggle that you have managed to overcome?
  ○ How did you do it?
  ○ Share with a partner.

Albert Einstein quote:
‘Do not worry about your difficulties in Mathematics. I can assure you that mine are still greater.’
TfEL Framework guide, p41

How many possibilities?
What is something that has been reported in the news this week?
• Roll a die and give 1–6 (according to the number rolled) reasons why this might have happened.
• Roll a die and give 1–6 (according to the number rolled) possibilities about what might happen next.

Deborah Mbuyane
I use a kerosene lantern to light my house.
I live in Hahndorf.
I have an iPhone.
I am a Sudanese person who migrated to Australia.
I am a woman who voted in the last South Australian election.
I am a famous South Australian Aboriginal inventor.
I made shields, clubs and boomerangs from the hard wood of the she-oaks.

I’m thinking ... scenarios
See mistakes as a series of thoughts that can change in the light of new information. For example:
• I’m thinking of a shape:
  ○ It has 4 sides. What could it be?
  ○ It has one line of symmetry. What do you think now?
  ○ It has no parallel sides. What do you think now?
Use language such as, ‘First thinking, second thinking, next thinking ... final thinking’. Ask students to represent this pictorially.

2.4
Challenge students to achieve high standards with appropriate support
Key actions: Teachers
Engineer learning conversations that extend students’ thinking.
TfEL Framework guide, p41
An archaeological dig

- When studying ancient civilisations, have students undertake an archaeological dig:
  - Either use this interactive dig, http://www.virtualmuseum.ca/sgc-cms/expositions-exhibitions/esprits-spirits/English/Dig/digdown.html
  - Or construct one yourself in a sandpit and divide into quadrants.
- As the students find different objects, introduce classifying techniques.
- Students share what they each found and set up a group museum by developing criteria and choosing what should belong.

Key actions: Teachers

Explicitly teach and articulate strategies for effective collaboration: role taking, listening to and respecting others’ points of view, appreciating different contributions and playing your part.

TEL Framework guide, p47

Historical learners

Get students to choose somebody famous, eg an explorer, sports person, inventor, musician, politician etc. They might still be alive or they might have died a long time ago. How could students choose outside the ‘normal’ heroes? eg David Unaipon and other successful Aboriginal people across Australia?

- How does/did this person show that they were a lifelong learner?
- What skills, dispositions and personal characteristics did they have?
- What skills, dispositions and personal characteristics do you share with this person as a learner?

Listening response

Ask students to record connections relevant to key words/ideas/concepts you identify in a discussion or activity eg:

<table>
<thead>
<tr>
<th>Key words/ideas/concepts</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- With a partner students share the connections they made and explain why they made them.

Language that teachers can use to teach students how to learn

How did you make connections from what you already know?
Could you teach someone else?

TEL Framework guide, p48

Adapted from Ways to … strategy: Superheroes

Ask students to design superheroes to embody the things that the students think are most important for them as lifelong learners (eg skills, dispositions, learning capacities).

TEL Framework guide, p48

What would you do?

Ask students to identify a problem from a popular television show. Think about your own strengths. How would you:

- solve the problem?
- help the character solve the problem?
- help the character learn from their mistakes?
### Newspaper headline
Read a random newspaper headline to the class.
- What does it mean?
- What do you predict the article will be about?
- What picture might accompany it?
- What questions can you ask me to help you understand the article without reading it yourself?
- Think of a better headline for this story.

### What if?
How would our lives be different if …
- electricity had never been invented?
- no-one from Italy ever migrated to Australia?
- we couldn’t smell?
- it snowed in winter?
- Australia didn’t become a Federation?
- World War 1 had never happened?
- digital technologies were never invented?
- cars didn’t run on petrol or diesel?
- ants were one metre long?

### Synthesis journal
Get students to reflect on their learning at the end of a week or when finishing a unit by completing a synthesis journal, in which they consider how they can apply this learning in the future.

<table>
<thead>
<tr>
<th>Synthesis journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I did</td>
</tr>
</tbody>
</table>

### Human graph
- Present a statement or premise eg: • we should all make donations to charity • more trees should be planted in our school grounds • teachers should ask more questions.
- Provide time for students to think about whether they agree or disagree.
- Students stand along a continuum, ranging from strongly agree to strongly disagree, to show their opinion.
- Students justify their opinion/position on the continuum.
- Encourage students to ask each other clarifying questions.
- Give students the opportunity to change their position after listening to one another.

### Key actions: Teachers
- Pose open questions with no right or wrong answers, to evoke students’ emotions, imagination, reflection, action and research from a range of sources and perspectives.
- Use strategies to help learners connect new knowledge to their own prior experience, other disciplines and the world beyond the classroom.

### Language that teachers can use to foster deep understanding and skilful action
- Can you clarify your point of view?
- Can you justify your conclusions?
TfEL Element 3.3
Explore the construction of knowledge

Practice check
In what ways do I help students construct accurate and useful knowledge about new concepts?
TfEL Framework guide, p56

TfEL Element 3.3
Explore the construction of knowledge

Key actions: Teachers
Teach students to critically analyse information and primary sources of data from a range of sources and for specific purposes.
TfEL Framework guide, p55

TfEL Element 3.3
Explore the construction of knowledge

Key actions: Teachers
Design activities that encourage and actively support students to be ‘apprentice’ historians, scientists, writers, artists etc.
TfEL Framework guide, p55

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TfEL Framework guide, p55

Snowball words
Choose unfamiliar words from any text.
- Write each word on a separate piece of paper.
- In small groups, students write a definition for the word on their piece of paper.
- What does the word mean?
- Groups rotate and add more information and ideas to each other’s definitions.

Picking holes
Start with any newspaper article, video clip etc.
- If this was presented in court would it stand up as evidence?
- What is missing?
- What is inaccurate?
- What could be challenged?
- What is biased?
- What doesn’t make sense?

What happened on this date in history?
Find 5 things that happened on this date.
- Share with a partner:
  ○ something that you already knew
  ○ the most interesting thing
  ○ the most surprising thing
  ○ something that seems out of place, ie one you thought would have happened at a different time in history
  ○ something people may find hard to believe.

Community of inquiry
Conduct a field trip outside with notebooks.
- Look around, what do you notice?
- Make 10 observations of your surroundings.
- From these choose 3 and list as many questions as you can.
- Choose one investigative question to inquire into. As part of this investigation include:
  ○ Aboriginal history
  ○ land management and sustainability.
- Who might need to think like this? When?
One minute challenge

Students are given one minute to write down all they know or would like to know about a certain topic.

- Students share their writing with a partner or in a small group and reflect on their understandings.
  - What was the most useful or interesting piece of information you heard about?
  - What questions do you still have?
  - What would you like to know more about?

These reflections might guide further learning.

Mixed up comics

Cut up several comic strips into individual frames.

- Give each student a piece.
- Find the other students whose pieces belong to the same comic strip as yours without showing each other.
- Put the comic strips back together.

Happy birthday

Find out who else was born on your birthday from different times in history.

- Which of these people would you most like to be? Why?
- Take on this persona and introduce yourself to other characters in the class.
- Stay in character for as long as you can.

Buzz groups

- Pose a topic eg:
  - summer is better than winter
  - dogs are a man’s best friend
  - school should finish at 2:30pm.
- Form groups of 3.
- Share ideas/responses in the group.
- Choose 3 to share with the class to create new understandings.
- What surprising/ funny/challenging ideas/responses did you hear in your group?
- What strategies did you use to listen to others in the group and contribute your ideas?

DEPARTMENT FOR EDUCATION AND CHILD DEVELOPMENT
Domino quiz cards
Create a set of cards with questions and answers on a topic, each with a question on one end and a non-matching answer on the other.

- Give each group a set of domino cards to share.
- One student reads out their question and places their card on the table.
- The student who thinks they have the corresponding answer places it next to the card, as in a game of dominoes.
- Keep the process going until all questions are answered. Lay cards in a circle formation so that the last question should be answered by the first card placed down.

Key actions: Teachers
Value prior knowledge as fundamental to new learning, seek out what the students already know, can do and understand, and use this to inform planning.

TfEL Framework guide, p65
**Bingo**
A fun way for students to get to know each other and the teacher to explore some of their common interests.

- Prepare a bingo card with 5 rows and 5 columns. It can focus on anything that is currently of interest to the students or that you have recently focussed on in the classroom, eg:
  - I love to play football
  - If I had a job in the media industry I would like to be a web designer.
- Students write names of students who match the descriptor on the card. A name can only be used once.
- When a student completes a row of 5 in any direction, they shout “Bingo!”

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**Movie review**
Name a movie you have seen.
- How does the movie connect to your own life?
- Which character is most like you?
- Which character is most like someone you know?
- Which character is not like you at all?
- What star rating would you give the movie?

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**10 most important jobs**
- List the 10 most important jobs in the world.
  - With a partner, explain why you have chosen these.
  - Do you think these jobs will exist when you leave school? Why/why not?
- Think of 5 jobs that don’t exist at the moment, but will be needed in the future.
  - Find another pair and convince them why these 5 jobs will be needed.

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**Where in the world?**
Find a label on your clothing, school bag, stationery etc.
- Where in the world was it manufactured?
- Where is that place?
- What other items were made there?
- What is the most popular country for shoes in our class?
- What else do we want to know about this country?

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**Key actions: Teachers**
Pose guiding questions that lead students to view familiar topics in more complex ways.

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**Key actions: Students**
Listen to my classmates and try to understand their views.
Take one home

Ask students to reflect on their learning and choose one idea to ‘take home’. Get them to think about a person they will see after school, at home, at sport, at work or somewhere else.

- What is one thing you have learnt or thought about at school today that this person might be interested in knowing? Why? What else could you have done/used?
- Could this person help you with your own thinking or give you helpful feedback?

Provide time for sharing the feedback with a partner the next day and what they have decided to do with it.

4.3 Practice check

Are my students receiving constructive feedback and advice from a range of people?

TfEL Framework guide, p74

What didn’t happen?

At the end of the day, have students write responses to the following questions on exit cards and place in a box as they leave.

- What didn’t you learn today?
- What didn’t happen at school today?
- Which skills didn’t you use today?
- What didn’t happen in the class today?
- Who didn’t you work with today?

Look at what they wrote and spend time discussing with students the next day.

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3.2-1 cards

Allow 5 minutes at the end of the day for students to fill out a 3-2-1 card which they hand in as they leave.

- 3 things I learned about … (eg friction)
- 2 questions I still have about … (eg friction)
- 1 way I see … (eg friction) working in the world around me is …

Key actions: Teachers

Scaffold learners’ efforts to conduct their own inquiry processes, experimentation and problem solving.

TfEL Framework guide, p73

Who’s on the money?

Select any note of Australian currency.

- Who is depicted on the note?
- Why are they there? How can you find out?
- Who would you put on the money if it was up to you? Why?
  - Discuss your decision with a partner.
  - Design 2 questions to ask your partner about their decision.

Key actions: Teachers

Incorporate deliberate and impromptu self and peer evaluation into everyday class activities, focusing on the quality of performance demonstrated in learning skills, understandings and knowledge.

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  - Discuss your decision with a partner.
  - Design 2 questions to ask your partner about their decision.
Before and after
Select any appropriate image from the internet.
- What could have happened before this image was taken?
- What could happen next?
- How can you represent a ‘before’ and ‘after’ scenario?

What next?
Watch a video clip and stop it halfway through.
- How do you think the video will finish?
- How do you think the video won’t finish?
- How can you communicate an alternative ending?
- Depending on the video, provide an Aboriginal perspective.

Backwards Day
Form a group of 3 or 4 people.
- How might you celebrate ‘Backwards Day’?
- Brainstorm as many ways as you can in 3 minutes.
- Choose one idea and decide how you will present your idea to the rest of the class.
- What made you choose that presentation? How effective was it?
- What else could you have done/used?

An iPad is like a …
Find a partner. Choose a fruit and finish this sentence:
An iPad is like a … (Substitute name of fruit) because …
- List as many ideas as you can in 2 minutes.
- Find another pair and share your ideas.
- What is a metaphor? When and why are they useful?