Lesson Plan – Tracking Progress

Introduction

The objective of this scene is to both explain how to navigate and track progress through the App as well as to introduce the student to the type of mindset that is helpful when learning anything new (growth mindset). The scene starts with Kylie explaining that the most important thing when learning maths is understanding. “If you understand how to get the answer then you will also remember it. Learning is about creating connections between something new and something you already know. We will teach you the easier times tables first and then make connections with these to teach the remainder. Just follow the sequence and it will all make sense to you.” Kylie goes on to explain to the student that they have as much time as needed to gain an understanding and complete each question.

The scene includes Kylie explaining the steps it took for her to learn to throw her boomerang so that it would return. This is the first introduction to mindset within the App. Kylie shows how connections were forming in her brain whilst at the same time the muscles were growing in her arm. Kylie practiced and practiced until throwing it the right way just happened automatically. A **growth mindset** is the belief that your intelligence and abilities can be developed. It is a helpful mindset to have whenever learning anything new as it takes effort and numerous mistakes to develop new skills. There students will reach a higher level of achievement if they embrace their mistakes as part of the learning process and persist until they can say “I’ve Got This!”.

Many students are of the belief that you are either born with a Math Brain or not. This is a common fallacy that is a long way from the truth. Math can be learnt like any new skill, As your brain grows more and more connections your math abilities will improve. What is important to understand about developing math abilities is that math is a subject that builds on previous learnings. A student who doesn’t have a grounding in numbers will struggle with addition and subtraction. One who doesn’t have a grounding in addition will struggle with multiplication and one who struggles with multiplication and division will also struggle with fractions and algebra. Hence the importance of learning these foundations skills and to gain a deep understanding of each of these concepts.

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The final part of this lesson is to help the student (and teacher) navigate through the App until they have received all 156 stickers. Ideally you will have practiced and become familiar in how to navigate through the Learning section of the App before the lesson commences.

Learning Outcomes

- Each student believes that their brain is capable of learning maths
- Each student understands that learning involves forming new connections in their brain. It's about creating connections between something new and something you already now.
- Each student believes that learning maths is all about understanding. If you understand than you will also remember.
- Each student embraces the concept that learning anything new takes effort and many mistakes along the way. These mistakes are an opportunity to grow provided you stick with it.
- Each student gains an understanding of how to navigate through the App.

Resources Required

- The App on a device
- Overhead projector or TV Monitor connected to the device (if teaching in a Group)
- Paper and pens/pencils for students

Scene

- This activity involves watching the "Number Sense" scene. After login, select the "Introduction" button followed by the "Number Sense" button.

Lesson

Time	Task
20 mins	**Key Concepts** Select the "Tracking Progress" Button and watch the video (5 minutes). At the conclusion of the video, ask the student/s:

	"What were Kylie the Kangaroo's key messages within the video?" Responses should include but not be limited to: - The most important thing about learning maths is understanding. If you understand how to get the answer, then you will also remember it. - Learning is about creating connections between something new and something you already know. - The App is untimed. You have as much time as you like to solve each question and as many attempts as you need until you understand how to solve them all. - Kylie learnt to throw the boomerang through lots of practice. This practice helped grow the muscles in her arms as well as the connections in her brain. - She kept practicing until all of a sudden, she "Got It". Now throwing the boomerang the right way just happens automatically. - It takes practice to learn maths. The more practice, the more connections that form in your brain which make it easier and easier to work out the answers. - If you make a mistake then stick with it, as this is when your brain grows the most. - The "Watch Again" button is there to help explain the key concepts again to you. - When you feel you fully understand how to solve each problem and you have answered correctly then you select the "I've Got This" button - When you demonstrate you understanding in how to solve each Times Table you will be rewarded with stickers
30 mins	**<u>Exploring Multiplication</u>** This activity can be done as individuals or in groups of up to 4 students.

	"It's now time to explore the way that we all learn new skills and abilities. I'd like you to spend some time to think about a skill or ability you have learnt or are learning and to share some of your experiences. I'd like to know the following (write these on the board): - What did you have to personally do to develop that skill? - How many mistakes did you make along the way? - What did you do when you made those mistakes? - Were there any moments when you thought to yourself "I've Got This!" What were they are how did it feel? - What did it take to get keep improving that skill or ability? Ask each student or groups to present back their examples and explore the different aspects of the mindset that was needed to learn something new. Wrap this activity up by asking the student/group: - Who here thinks that they have math's brain? (wait for responses) - For those who believe that they do have a math brain, how did it come about? (explore this with them, particularly the concept that some will believe they were born with one) - What did we see happening with Kylie's brain as she learnt to throw the boomerang and when she was learning maths? - What is it going to take for everyone in this class to develop a math's brain? (gaining an understanding, lots of practice, persistence, seeing mistakes as an opportunity to grow your brain the most) - What are the components built into the App to help grow a math's brain? (Learning and Tips

	scene, working out space, watch again button and you have as much time as you need)
15 mins	**<u>Navigational Activity</u>** This activity s to help the students navigate through learning each Times table. (1) Select the "Learn the Times Tables" button to progress to the home screen. (2) Select 'Start" which will open the Learn screen for the zero times table. (3) Explain there is Learn, Tips and Practice for each Times Table and that they should be done in that order. (4) Select Practice and the Practice screen will open with the first question. (5) Ask the students for the answer. (6) Answer "0" and select the "Check" button. (7) Watch the "Correct Answer Video" and then select the "I've Got This" button. (8) Receive your sticker and select the "Next" button for the next question. (9) This time answer incorrectly by typing in 6 and selecting '"Check" (10) Watch the "Incorrect Answer Video" (11) Select the "Watch Again" video and discuss how this button and scene have been designed to help you out so you rethink how you solved the problem and then for you to "Try again" (12) Demonstrate the "Working Out" side of the screen by writing "Y groups of 0 objects" – which is "Yx0". The answer is 0. (13) Type in "0" and select "Check"

	(14) Watch the "Correct Answer" video and select "I've Got This" to receive your second sticker (15) Select the "Next" button to move onto the 3rd question. Ask the students if they need any more help navigating through the App. If not, then they are ready to progress to learning each Times Table.