

A young woman and a young man in red school uniforms are focused on building a LEGO Mindstorms robot. The woman is on the left, smiling as she looks at the robot. The man is on the right, looking intently at the robot. They are in a classroom setting with a whiteboard and colorful posters in the background. The robot is a white LEGO Mindstorms Technic robot with a camera sensor and a motor. It is sitting on a blue surface. A red plastic tray is in the foreground, containing various LEGO parts.

For students starting high school

# Maths trains brains

Maths activities for Year 7  
students, anytime, anywhere!





**Time taken:**  
45 minutes

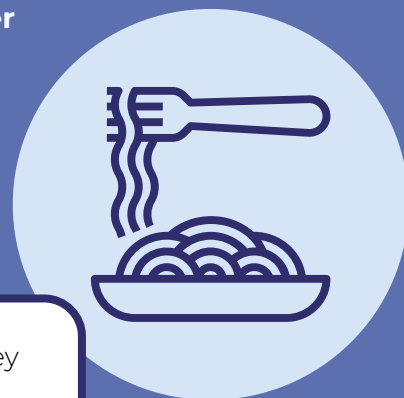
**Things you need:**  
A recipe that doesn't quite match up with how many people you're feeding and recipe ingredients

# Chef for the night

Hand over the evening meal to your child and get them to choose a recipe that they want to cook. To increase the mathematical challenge, get them to make a different number of servings than the recipe calls for. They'll have to do some calculations and work out the portions.

## The challenge

Help your teen gather the ingredients they'll need for the recipe they want to cook and supervise any dangerous parts of the cooking.



## The conversation

Throughout their MasterChef moment, ask your teen these questions to support their understanding of the mathematics involved:

- "How much of each ingredient do you need, and how did you think through that?"
- "What is the best way to measure how much milk (for example) you need?"
- "How would you have worked this out if we only needed to make one-and-a-half times the normal recipe?"
- "If I help keep the kitchen tidy as you are cooking, would that be helpful?"
- "Imagine we had to make this recipe for 100 people. How much flour would we need?"

## The career

Chefs, tradies, scientists, doctors and warehouse managers all have to be able to work with problems involving volume and capacity.



**Time taken:**  
2 hours

# Charity donations

Ask your teen to pick a cause they're passionate about and have them work out a plan so they can offer some support in a way that suits them and your family.

Learning about money includes learning the value of your time and sharing belongings.

## The challenge

One of the ways that we can help teens understand the value of money is through supporting a charity of their choice. They can do this by volunteering with you at charity events, and they can also support their charity by fundraising or earning money to make a donation.



## The conversation

- “Why is this charity important to you?”
- “Are there other charities with a similar goal?”
- “People can support charities by donating money, but you can also support charities by donating your time, or by donating things that you don't need any more. Are there other ways we could help or support your charity without money?”
- “If you'd like to donate money, what percentage of your pocket money could you afford to donate?”
- “If you'd like, what are some things that you could do to earn a little bit more money to support your charity?”

## The career

The ability to budget is a skill every person needs. It helps us in our everyday life and in almost any career. Whether you're a painter, a plumber, a hairdresser, or a lawyer, being able to organise your money is a key skill for success.



**Time taken:**

10 minutes

**Things you need:**

Fitness tracker (most phones come with this app), notebook to record data

# Tracking your activity

What does the data from a smartphone's fitness tracker tell your child about their life?

## The challenge

The Australian Department of Health recommends children and young people do 60 minutes or more of moderate to vigorous physical activity every day.

Ask your teen to record their physical activity or daily step count over a month and then look at the data together. If they're counting their steps, they'll need a pedometer.

## The conversation

During the month, talk to your teenager about the data they're collecting:

- "Are there particular days of the week that you are more or less active?"
- "Have you noticed any trends or patterns in your data over the month?"
- "Is your activity data different on weekdays versus weekends? If so, why?"
- "Were there any days in the month where your activity was unusually high or low? Why?"



**Take the challenge:** Why not get your school to participate in the Premier's Sporting Challenge this year? Track your physical activity for 10 weeks and aim to be more active, more often. (You'll also collect 10 weeks of data to analyse!)

## The career

The analysis of health, fitness and performance data is the key role of a personal trainer, coach or exercise physiologist.

Beyond sport, analysing patterns in data is essential across a variety of careers. Economists, investors, forensic scientists, fashion buyers, statisticians and business owners all use data trends to make informed predictions and decisions.



**Time taken:**  
2 hours

**Things you need:**  
2+ players, 2 dice, pen and paper

# Pig (dice game)

This fun dice game is a great way to explore probability, and improve your child's confidence with addition. Watch out! This game can lead to some almighty family battles. Suitable for grades 1-7.

## The challenge

### Step 1

Set a target number, for example 100. The object of the game is to reach this number so make it large for more rounds.

### Step 2

Players take turns rolling the two dice as many times as they want within each round. Keep adding up what they've rolled, and keep a running total until they decide to stop. When a player decides to stop, they bank their total by recording their score.

But be careful – if you roll a 1, your turn ends and you get zero for that round.

If you roll a double 1 (this is called 'snake eyes'), your turn ends and your entire banked score goes back to zero.

### Step 3

Players take turns swapping rolls after each round, and keeping track of how much they've banked, aiming to be the first person to reach your chosen target number.



## The conversation

**This game relies on luck. As you're playing, talk with your child about:**

- "Do you think it's certain that I will roll a snake eyes, and lose everything that I've banked?"
- "I really hope you roll a 1. Do you think it's likely?"
- "What are some strategies that you are using to help you keep your running total?"
- "You need 14 more points to get to 100! Can you win in your next go? What would you need to roll? Do you think it's likely that you'll get those numbers?"
- "If we were to play this game again tomorrow, what would you do differently?"

(from [www.youcubed.org](http://www.youcubed.org))

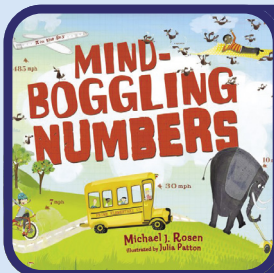
These books can be purchased online, in stores or may be available to read and borrow from your local library.

Find your local library



# Books to build mathematical understanding

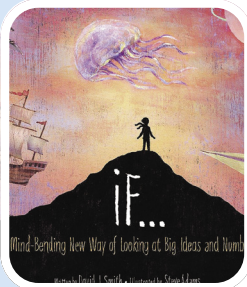
These 5 books are a great way to show your child that our world is full of maths – and in places they might not expect. They're a great way to continue to support your child's mathematical imagination and understanding.



## Mind-boggling Numbers

Written by Michael J. Rosen and illustrated by Julia Patton

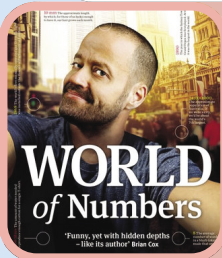
"If everyone on Earth owned exactly the same amount of land, how big would your yard be?" This book poses some curious questions and uses maths to help us answer them. This is a fun read that encourages noticing and wondering whilst also exploring aspects of measurement and numbers.



## If: A Mind-bending Way Of Looking At Big Ideas And Numbers

Written by David J. Smith and illustrated by Steve Adams

Numbers help us describe the world around us. To do that, sometimes we need really big numbers, which may be challenging for young minds to understand. But what if your child could think about those numbers in relation to things we can readily see, feel and touch? If your child has ever wondered 'how big is that?', this incredible book is for them.



## Adam Spencer's World Of Numbers

Written by Adam Spencer

This book explains how the world around us is filled with maths. Maths plays a vital role in sports, cooking, astronomy and even moving a sofa into a house. Your child will learn about maths in everyday life through various famous faces from history – from the Wright Brothers to Jimi Hendrix.



## How Many Socks Make A Pair? – Surprisingly Interesting Everyday Maths

Written by Rob Eastaway

This book uses everyday things, such as newspapers, cards, Sudoku puzzles and even socks to reveal the beauty of mathematics in the world around us. It explores mathematical ideas in practical and unique ways.

DAVID DARLING  
AGNIJO BANERJEE



## Weird Maths: At The Edge Of Infinity And Beyond

Written by David Darling and Agnijo Banerjee

Exploring the connection between maths and life, this book presents a collection of interesting maths facts in intriguing ways.

It tackles questions like, "How would a four-dimensional being view our world?" and also investigates game theory, Turing machines, logical paradoxes and transfinite numbers. Interesting stuff!

# Five resources to build positive maths mindsets

Scan to find videos



Having a positive mindset can help improve outcomes and understanding in all aspects of your teen's learning. Packed with profound lessons, inspiration and real-life stories about resilience, problem solving and perspective, these resources can continue to support a positive mindset towards learning and mathematics.

## Mathematics Is The Sense You Never Knew You Had

*Developed by TEDxSydney*  
*Speaker: Eddie Woo*

In this engaging and insightful talk for TEDxSydney, mathematics teacher Eddie Woo explores the mathematical realities woven into the fabric of the universe – from lightning bolts to river deltas to blood vessels. Eddie makes the bold statement that we are all born to be mathematicians – let his joy and passion for learning inspire you and your teen to consider mathematics as a whole new way to see the world.

## Confidence-Boosting Maths Messages

*Developed Youcubed at Stanford*  
*Speaker: Professor Jo Boaler*

In this insightful video, Professor Jo Boaler from Stanford University and her students explain why everyone can master maths. They use the latest brain research as well as examples and stories of the mathematicians in history who've encountered setbacks and spent years working on problems. This video can help us realise that maths isn't about speed – it's about growing our brains, creativity, and finding and solving problems.

## 3 Tips To Boost Your Confidence

*Developed by TED Ed*  
*Speaker: Angela Lee Duckworth*

When faced with challenges, you've probably heard the advice, "Be more confident." But where does confidence come from and how can you get more of it? This animated video by TED Ed in partnership with the Always #LikeAGirl campaign provides some lessons to boost your confidence so you can face learning head on.

## Adam Spencer: Why I Fell In Love With Monster Prime Numbers

*Developed by TED Talks*  
*Speaker: Adam Spencer*

A fantastic TED Talk by mathematician, comedian and self-appointed lifelong lover of maths, Adam Spencer. Your child will learn about monster prime numbers – those massive odd numbers that can only be divisible by one and themselves! They can be millions of digits long and mathematicians go hunting for them. Explained with his trademark humour and wit, let Adam inspire and broaden your teen's view of how mathematicians persevere through tough challenges and work together to solve some really awesome problems.

## Richard Turere: My Invention That Made Peace With Lions

*Developed by TED Talks*  
*Speaker: Richard Turere*

In the community where Richard Turere lives with his family, cattle are vital to their way of life, but lion attacks can put an entire family's herd and future at risk. In this TED talk, you'll learn how Richard used maths to invent and design a solar-powered solution that safely scared the lions away and continues to protect his family and their livelihood. Enjoy this story about how maths helped Richard and his community, and illustrate the power of problem solving and grit with your teen.



# Maths is everywhere



Explore a mix of fun games, useful resources and creative activities on the Everyday Maths Hub.

[Scan to find more activities](#)






## Translated resources

We've translated a selection of our Everyday Maths resources into Arabic, Chinese, French, Indonesian, Japanese, Korean, Portuguese, Russian, Spanish, and Vietnamese.

[Scan to find activities in your language](#)

We acknowledge the homelands of all Aboriginal people and pay our respect to Country.

## Say hello

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