

Colgate

BRIGHT SMILES,
BRIGHT FUTURES™



Dr. Rabbit AND THE TOOTH DEFENDERS



**An Oral Health
Education Program
for Children Ages 7-9 Years**





Dear Teacher,

WELCOME to Colgate *Bright Smiles, Bright Futures*™!

A Global Partnership

Each year, Colgate-Palmolive Company's award-winning Colgate ***Bright Smiles, Bright Futures*™ (BSBF)** global oral health education program reaches over 50 million school children and their families... in 30 languages and 80 countries. It's teachers like you who have made this self-esteem-based programme an international success!

BSBF: Empowerment for the Future

Bright Smiles, Bright Futures™ gives teachers, children and families around the world the tools they need to make good oral health a permanent part of their lives. With the focus on **prevention**, the programme builds self-esteem and teaches good oral health practices to create lifelong habits. Most importantly, BSBF inspires kids to **take control of their own oral health**. Its' messages of empowerment enable children to not only understand "what" to do to take care of their teeth and gums, but the "why" behind the messages. In this way, BSBF equips them to become lifelong Tooth Defenders.

Since its' 1997 launch in Australia and New Zealand, Colgate *Bright Smiles, Bright Futures*™ (BSBF) has made it easy for teachers like you to integrate oral health in your classroom. Now, the newest program in the BSBF series wraps the tried-and-true appeal of superheroes and special powers into a program that is sure to excite your students!

We wish you success with the programme. Thank you for helping childrens' bright smiles last a lifetime.

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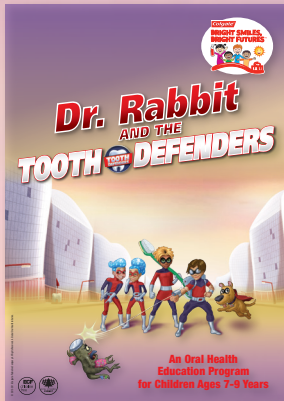
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Resources



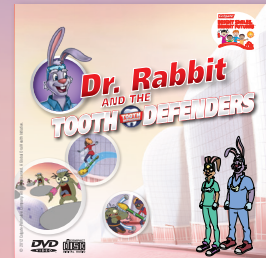
Teacher's Guide:

Includes Classroom Activities and all you need to know to make each lesson educational and fun. Create a Tooth Defender chorus with the bonus song music insert!



Parent Take-Home Packet: *Your Child's Bright Smile*

Reinforce your students' learning at home. Each packet contains important oral health messages, a family brushing chart and a toothpaste and toothbrush.



DVD Video: *Dr. Rabbit and the Tooth Defenders*

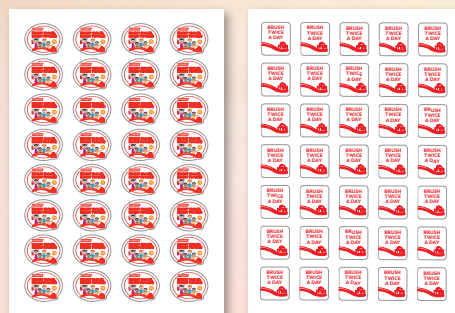
Inspire your students to become Tooth Defender "superheroes" by joining Dr. Rabbit and Dr. Brushwell and the Tooth Defender team on a mission to protect Tooth City from the sticky, sugary villain: Placulus! Star reporter, Pearl-E-White, is interviewing the team when they encounter the Plaque Monsters and their Acid-Blaster Cruisers. Suddenly they are trapped in a Sweet Storm. Who will save Tooth City now?



Poster:

Be a Tooth Defender!

This visual guide shows how to brush and where to brush. Display it in your classroom so your students can perfect their brushing technique.



Stickers:

Tooth Defender

Reward your student's effort in learning to take care of their smiles.

Bright Smiles Key Messages

- Brush with fluoride toothpaste twice a day, especially after eating breakfast and before bedtime
- Floss daily
- Limit the number of times you eat sweet and sticky snacks
- Have a regular dental check-up
- Oral health is an important part of overall health



About the programme

This engaging, activity-based programme fits into your existing curriculum, so you don't need to add a new unit to your busy day. Each lesson identifies key learning areas and outcomes, and is flexible, so you can adapt to your own classroom needs. And best of all, your students will love it!

- The **multimedia components** feature Dr. Rabbit and Dr. Brushwell – two cartoon dentists who have mentored a group of children to become Tooth Defenders “superheroes.” Together, the team undertakes a mission to protect Tooth City from the sticky, sugary villain: Placulus!
- The **easy-to-use materials** were developed with teachers and oral health experts from around the world. In addition to fitting into your curriculum, the developmentally appropriate components are designed to challenge children to take responsibility for their own oral health.
- **Family involvement** is an important part of the BSBF methodology. You'll find ideas for getting parents and other family members involved with the topic of oral health included throughout the guide.

Now, take a look at the materials – then invite your students to team up with **Dr. Rabbit and the Tooth Defenders** and become superheroes in protecting their *own* bright smiles!



TOOTH DEFENDER MISSION

Each lesson can be used in sequence, building on the previous learning outcomes, or as a standalone, depending on your individual needs. Lessons have been designed for students in years 2 - 4 and to integrate into national curricula in Australia and New Zealand. Proceed through the Mission at your student's pace and feel free to incorporate into your other modules where appropriate.

TIP: Use a Tooth Defender MISSION Bulletin Board to showcase student work and achievements.

LESSON/ACTIVITY	Learning Area	Page
1: Be a Hero, Starts with a Smile	English, Art	6
2: Dr. Rabbit and the Tooth Defenders <i>includes Video Scene-by-Scene</i>	English	8
3: YOU too, can be a Tooth Defender!	English, Art	12
4: The Science of Placulus	Science, Maths	14
5: Brush Like A Tooth Defender	English, Maths	18
6: Chronicle a Tooth Defender	English, Art	20
7: Tooth Defender Graduation	English	22



Oral Health Information for Teachers

It's all about PREVENTION

As an educator, you have an ongoing opportunity to share knowledge and encourage positive oral health practices so children can learn to protect their smiles for life. You'll help them to learn to prevent problems *before they occur*. Without regular oral hygiene, plaque acid can form on teeth and cause cavities. Left untreated, cavities can create serious problems including decay, loss of teeth and gum disease which can impact overall health and self-esteem.

1. BRUSH WITH FLUORIDE TOOTHPASTE AT LEAST TWICE A DAY

Why fluoride?

- Fluoride is a natural element that combines with the enamel or outside layer of the tooth to strengthen it.
- It makes teeth harder and protects against decay and cavities.
- Drinking fluoridated tap water also helps strengthen teeth.

Any brushing tips?

- Use a pea-sized amount of fluoride toothpaste on a small soft-bristled toothbrush to brush all tooth surfaces gently and thoroughly. Wiggle the toothbrush back and forth and be sure to brush the gums and tongue. Don't scrub. When finished brushing, spit the toothpaste into the sink. Use only a small amount of water (if any) to remove excess toothpaste. There is no need to fill the mouth with water to rinse as this may dilute the fluoride protection.
- Change your toothbrush every three months or when it becomes splayed or "shaggy".
- Never share your toothbrush.

Why after breakfast before bedtime?

- Because plaque acid forms on the teeth after eating, breakfast is the first opportunity in the day to remove the bacteria causing plaque. It will also help to remove plaque that may have formed on the teeth during sleep.
- As plaque can grow during sleep when saliva protection is less, brushing before bedtime is very important to reduce plaque's impact on teeth.

2. FLOSS DAILY

Why is flossing important?

- Children need to know that oral health is more than tooth care. Gums are important too! They help protect the teeth and secure them in the mouth.
- Flossing helps protect against gum disease by removing food from between the teeth and gumline, reaching where the toothbrush can't.
- Adults should encourage and assist children with flossing their teeth.

3. LIMIT THE NUMBER OF TIMES YOU EAT SNACKS EACH DAY

Why limit the number of times?

- Every time a decay-promoting food (sugar and starch-sugar), enters the mouth, harmful plaque acid may attack tooth enamel. Repeated attacks can result in tooth decay. Eat five sweets at one time and you are exposed to possible tooth decay for 20 minutes. Eat one sweet at five different times and you are exposed to possible tooth decay for 100 minutes!



4. HAVE A REGULAR DENTAL CHECK-UP

Why?

- Even when we brush and floss daily, it is important to visit a dental professional regularly. They make sure our teeth and gums are healthy, diagnose dental problems that we can't see, and treat dental disease. They can help to prevent a small problem from turning into a larger one.

5. ORAL HEALTH IS AN IMPORTANT PART OF OVERALL HEALTH

How?

- Poor oral health can have a negative impact on a person's general health. This can include difficulty eating, speaking, pain and poor self-esteem. Children in particular can experience increased loss of school days due to poor oral health.

In fact

- in Australia dental caries (tooth decay) is five times more common than asthma.^{1,2,3}
- Dental caries is Australia's most prevalent health problem.⁴
- Dental caries in the baby teeth is the strongest predictor for dental caries in the permanent teeth.⁵

1. ABS. 2009, National Health Survey: Summary of Results, 2007-2008, Catalogue no 436.0. Canberra, Australian Bureau of Statistics. 2. Armfield JM and Spencer AJ. 2007, Community effectiveness of fissure sealants and the effect of fluoridated water consumption, Community Dental Health, vol.24, pp4-11
3. AIHW Dental Statistics and Research Unit. 2009, Dental health of Australia's teenagers and pre-teen children. The child dental health survey, Australia 2003-04, dental Statistics and research Series, number 52. Canberra, Australian Institute of Health and Welfare. 4. NACOH.2004, Healthy mouths, Healthy lives: Australia's National Oral Health Plan 2004-13. Adelaide, National Advisory Committee on Oral Health, Australian Health Ministers Advisory Council. 5. Kaste LM, Marianos D, Chang R, Phipps KR. 1992. The assessment of nursing caries and its relationship to high caries in the permanent dentition. Journal of Public Health Dentistry 52(2):64-68.

LESSON 1

Tooth Defender Training Starts with a Smile!

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>In this introductory lesson, students begin their Tooth Defender training by exploring bright smiles and how oral health relates to their everyday lives. They explore how oral health is an important part of overall health. They also take their smile exploration home to share!</p> <p>Time Required: 20 minutes</p> <p>Preparation:</p> <ul style="list-style-type: none"> → Gather paper and crayons or coloured pencils → Make copies of the <i>Sharing Bright Smiles</i> take-home handout for each student <p>Optional:</p> <ul style="list-style-type: none"> → Show the <i>My Bright Smile</i> calendar award-winning art for each month 	<ul style="list-style-type: none"> • Share existing knowledge of oral health. • Explore the connections between oral health and well-being. 	<p>English</p> <ul style="list-style-type: none"> • Choose appropriate words to express and describe ideas while speaking and writing. • Ask and answer questions to explore a topic and gather more information on a topic. <p>Art</p> <ul style="list-style-type: none"> • Use diverse materials, in combination with writing, to express ideas visually and creatively.

1. Engage: Share a Smile

- What does a bright smile look like?
- What makes a bright smile?

2. Explore: What's in a Grin?

- Each student draws a bright, healthy smile using a partner as a model.
- Invite students to showcase their smile portraits on the **Bright Smiles Bulletin Board** and share what they know about oral health:
 - *What do we use our teeth for?* (Talking, smiling, eating, chewing)
 - *What does a healthy smile mean?* (Oral health means teeth and gums are strong and healthy. Good oral health is an important part of overall health)
 - *Who is in charge of keeping our teeth healthy?* (WE are – with help from parents for flossing, and the dental professional to check our teeth regularly)
 - *How can we keep our smiles shining?* (Share Key Messages from pages 3 and 5; display them on the **Bright Smiles Bulletin Board**)

3. Extend: Bright Smiles Class Book

Showcase the following ideas in a Bright Smiles class book!

- Have each student draw a picture showing one thing our teeth help us to do.
- Create a cover page with a title e.g. *Why We Love Our Teeth* and include the names of the student “authors”.
- Enjoy the book by helping students make the oral health connections.
- Reinforce the understanding that we use our teeth in so many ways, we should take care of them so our smiles will last a lifetime.





MISSION #1

Sharing Bright Smiles

Start your Tooth Defender training with a “smile exploration!”

Child's Name _____

Draw what a bright smile looks like:

How can I keep my smile bright?
Draw or write your ideas:

Fill in the blanks:

My teeth are an important part of my smile. My teeth help me to:

_____!

How can you share a smile with someone you love? Find out by asking someone in your family.

I asked _____
what makes him/her smile. Here's the answer:



LESSON 2

Dr. Rabbit and the Tooth Defenders

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>It's time for students to meet their superhero mentors Dr. Rabbit and Dr. Brushwell, along with their team of Tooth Defenders! The entertaining animated video brings all of BSBF's key messages to life. Your students explore the video scene-by-scene and through a scavenger hunt; learn key oral health vocabulary; and discover why it's important to become a Tooth Defender!</p> <p>Time Required: 30 minutes x 2</p> <p>Prepare the Lesson:</p> <ul style="list-style-type: none"> ✓ Video: "Dr. Rabbit and the Tooth Defenders", TV screen or projector ✓ Scene-by-Scene Showcase on page 9 and 10 → Make copies of the handout Tooth City Scavenger Hunt for each student 	<ul style="list-style-type: none"> • Define and communicate oral health vocabulary: <i>toothpaste, toothbrush, floss, plaque</i>. • Identify and describe oral health strategies that help them become Tooth Defenders (making positive personal health choices). 	<p>English</p> <ul style="list-style-type: none"> • Acquire, define and use new and varied vocabulary correctly while speaking and writing. • Determine main ideas and describe supporting details of information presented in diverse media, visually and orally. • Ask and answer questions to explore a topic, gather more information to demonstrate understanding of an idea, event, or concept. • Report on a story with appropriate facts and relevant descriptive details.

1. Engage: Meeting Superheroes

- Have students share the name and power of their favourite superhero.
- Get the class geared up for the video: they are about to meet some brand new superheroes called **Dr. Rabbit, Dr. Brushwell, and the Tooth Defenders!** In this adventure story, four children just like them embark on a mission to defend Tooth City by practicing good oral health habits and fighting Placulus (plaque).

2. Explore: Tooth City Scavenger Hunt

- Play the video once through without interruption, reminding students to pay close attention to the details.
- Have students use the information from the video to begin the **Tooth City Scavenger Hunt** handout. Ask them to complete what they can remember based on the first viewing.

3. Explain: Scene-By-Scene with the Superheroes

- Explore the oral health messages from the video using the Scene-by-scene Showcase. Play the video again, and pause after each scene to discuss new vocabulary and key oral health points depicted as the Defenders experience their challenge.
- Have students review and complete their Tooth City Scavenger Hunt repro.

4. Evaluate: Tooth Defender Trivia

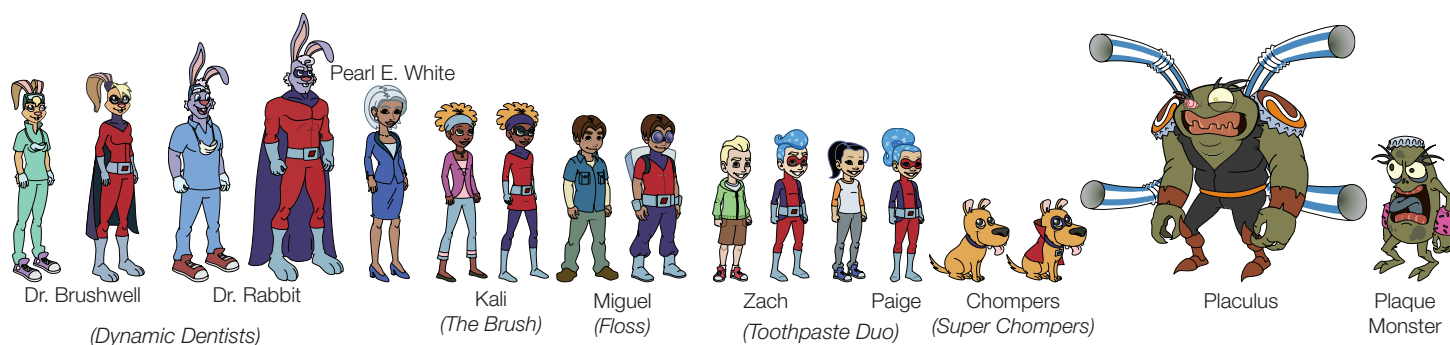
- Write "Who, What, When, Where, Why" on the board, and challenge your students to some Tooth Defender Trivia, such as: *Who are the characters? What was happening when the sugar storm rained down? Who is Pearl E. White? Where did Placulus attack?*
- List responses on the board, and encourage students to ask their own challenging questions.



Answers to the Tooth City Scavenger Hunt handout:

1. Toothbrush; 2 times a day
2. FLOSS
3. Sweet and sticky foods
4. Lollies, soda (sweet fizzy drink), cupcake, chips
5. PLAQUE; drawing of decaying tooth
6. Fluoride Toothpaste
7. FLUORIDE : (b) fight Placulus
8. Chompers convinces the boy to stop eating sweets.
9. Body. (Reinforce that a bright smile is something they can share proudly!)
10. Answers include: Fluoride toothpaste power, toothbrush power, floss power

Meet the Characters



Video Scenes



Intro: The story begins in a young boy's bedroom – we zoom into his mouth and find ourselves in sparkling Tooth City, home of the Tooth Defenders!

Action:

Four regular kids – Zach, Paige, Kali and Miguel – finish a healthy breakfast and head off to brush their teeth. As they brush, they chat about the important must-dos for toothbrushing. But wait – they soon discover that their puppy pal, Chompers, needs help learning to take care of his teeth!



Explore:

What supplies do the kids use to brush their teeth?
What are the important “must-dos” for toothbrushing?

Key Messages for discussion:

- Brush with fluoride toothpaste twice a day, especially after eating breakfast and before bedtime
- Never share your toothbrush
- Replace your toothbrush every 3 months or when it becomes shaggy
- Use a pea-sized amount of fluoride toothpaste and brush for two minutes

Action:

The kids launch into a musical anthem that highlights the importance of keeping a bright, shiny smile. Dr. Rabbit and Dr. Brushwell – everyone's favourite dentists – chime in to sing along!



Explore:

Sing along to the musical anthem with your students (see song lyrics and music insert). Then ask: What did you learn in the song? Why is it important to keep a bright, shiny smile?

Key Messages for discussion:

- Brush with fluoride toothpaste twice a day
- Floss daily
- Limit the number of times you eat sweet and sticky snacks
- Have a regular dental check-up
- Oral health is an important part of overall health

Action:

We travel to downtown Tooth City, where Dr. Rabbit & Dr. Brushwell are being interviewed by star reporter, Pearl E. White. Suddenly, skies above are filled with Plaque Monsters floating in their Acid Blaster Cruisers. The two dynamic dentists call the Tooth Defenders into action! They must use their dental “powers” to fight off the Plaque Monsters and clean up Tooth City. Kali, “The Brush,” scrubs the buildings with toothpaste supplied by the Toothpaste Duo (Finn and Paige); Miguel, “Floss,” gets the plaque monsters hiding between the buildings (the teeth). Dr. Rabbit and Dr. Brushwell lend a hand and cheer on the Defenders.



Explore:

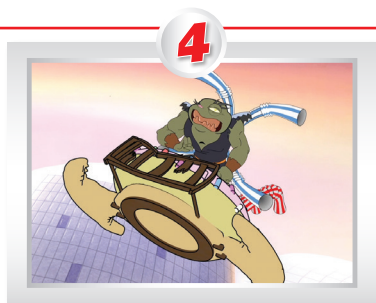
What do the Plaque Monsters do? Why are they so bad? How do the Tooth Defenders keep the Plaque Monsters away? How do they brush the buildings (teeth)?

Key Messages for discussion:

- Plaque is bacteria that mixes with food to cause acid. It can attack teeth every time you eat!
- The Tooth Defenders' key tools include fluoride toothpaste, toothbrushes (replaced regularly), floss, and regular dental check-ups.
- Brush all surfaces of teeth: top, bottom, inside, outside, tongue and the molars way in the back
- Brushing with fluoride toothpaste helps strengthen teeth and fight plaque

Action:

Here comes Placulus! The sticky villain unleashes a Sweet Storm, hovering above the city in his cruiser as sweets rain down on Tooth City! Our heroes are in peril, as the non-stop sugary invasion creates an ever-increasing plaque reaction. The Tooth Defenders need to get to the source of the problem ... and aha! They realise that it's the boy. He is snacking non-stop on sticky sweets!

**Explore:**

What sticky sweets rain down on Tooth City during the Sweet Storm?
What happens to Tooth City during the storm?

Key Messages for discussion:

- Sugary sweets cause a plaque reaction and put teeth at risk for decay
- Every time you eat, plaque acid can attack your teeth. That's why it's important to limit the number of times you eat snacks each day!

Action:

The Defenders are stuck in sticky plaque – so it's Super Chompers to the rescue! He flies out of Tooth City and comes face to face with the boy, "miming" the situation and helping the boy to realise that to stop the plaque attack, he has to stop snacking all the time!

**Explore:**

How does a plaque attack happen?
How can it be stopped?
What snacks should we avoid?

Key Messages for discussion:

- Limit the number of times you eat sweet and sticky snacks
- Plaque is bacteria that mixes with food to cause acid. It can attack teeth every time you eat!

Action:

The Sweet Storm has subsided ... and the Tooth Defenders are back in action, unleashing their Bright Smiles Super Powers! The Brush has a final showdown with Placulus, brushing him thoroughly with fluoride toothpaste to get rid of him. He's gone for now ... but he'll be back, which is why good oral health habits are important every day.

**Explore:**

How often should we brush our teeth?
What parts of our mouth should we brush?

Key Messages for discussion:

- Oral health is an important part of overall health!
- To get rid of plaque, it's important to brush all surfaces of the teeth: inside, outside, front, back, top, and bottom. And don't forget the tongue!

CONCLUSION:

In our final scene, the Tooth Defenders, Dr. Rabbit, Dr. Brushwell and Pearl come face-to-face with the kid, reminding him that he can be a Tooth Defender, too. And so can YOU!

**Explore/Recap:**

What does each Tooth Defender do?
What are their super powers?
How can you be a Tooth Defender?

Key messages for discussion/recap:

- Brush with fluoride toothpaste twice a day
- Floss daily
- Limit the number of times you eat sweet and sticky snacks
- Have a regular dental check-up
- Oral health is an important part of overall health

**Scavenger Hunt at Home:**

Ask students to do a scavenger hunt at home to see how many "Tooth Defender" (oral health) tools they can find. Have them report what they found, and identify what additional oral health items may be needed. Alternatively, challenge kids to share their new oral health vocabulary words with their families and each other.





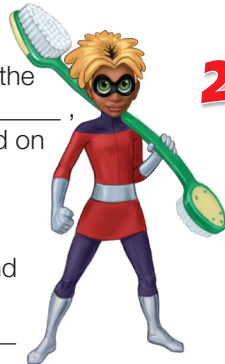
MISSION #2

Tooth City Scavenger Hunt

You just met "Dr. Rabbit and the Tooth Defenders"! Use the clues below to find the missing details found throughout Tooth City!

Child's Name _____

- 1** Kali's superhero tool is the _____, which she surfs around on defending Tooth City. How many times a day should you use this superhero tool to defend your mouth?



- 2** Unscramble the letters to write an important oral health tool:

SFLSO _____

Use this every day – it removes the plaque that brushing may have missed. Remember to ask your parents for help!

- 3** Describe the kinds of food that Placulus uses to attack teeth: _____



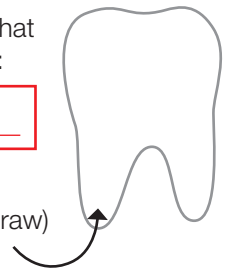
- 4** Make an X through the foods that are some of Placulus' most dangerous weapons:



- 5** Unscramble the letters to write what Placulus uses to harm your teeth:

LAPUEQ _____

Too much of this makes the buildings in Tooth City look like (draw)



- 6** Paige and Finn shoot blobs of _____.

Without this, Kali cannot do her job with the toothbrush.



- 7** Add the missing letters and circle the best choice to finish the sentence:

F _ UO _ IDE is used by the Tooth Defenders to...

- a) give Placulus a yummy snack
- b) fight Placulus
- c) colour Tooth City



- 8** How does Chompers save the day?

- 9** Being a Tooth Defender is not only good for your mouth...it's good for your whole _____.

- 10** If you could have any of the Bright Smiles Super Powers used by the Tooth Defenders, which one would you choose? Why?



LESSON 3

YOU too, can be a Tooth Defender!

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>After meeting the characters from Dr. Rabbit and the Tooth Defenders, students further explore oral health choices. They discover how they too can be superheroes and fight off Placulus with their superhero supply kit...and they'll even act out an original Tooth Defenders skit!</p> <p>Time Required: 30 minutes x 2</p> <p>Prepare the Lesson:</p> <ul style="list-style-type: none"> → Make copies of the handout Bright Smiles Supply Kit for each student → Bring in samples of real Super Power supplies, if desired → Using the handout, create a sample kit to model to the students → Write the following questions on the board or large sheet of paper: <ul style="list-style-type: none"> – What is the superhero's power? – How is the power used? – Why is this power so important for keeping a bright smile? 	<ul style="list-style-type: none"> • Explain the connection between healthy choices and the positive actions of a superhero. • Demonstrate an understanding of how to use oral health tools. • Creatively identify and summarise oral health practices. 	<p>English</p> <ul style="list-style-type: none"> • Describe characters in a story and explain how their actions contribute to the sequence of events. • Tell and dramatically express a story with descriptive details speaking clearly at an understandable pace, using dialogue to express the thoughts, feelings and responses of characters. • Participate in collaborative conversations with diverse partners. <p>Art</p> <ul style="list-style-type: none"> • Use diverse materials, in combination with writing, to express ideas visually and creatively.

1. Engage: What Makes a Superhero?

- Begin a class brainstorm by asking: What makes a superhero? How do superheroes act?
- Why are the Tooth Defenders superheroes? (They practice healthy choices to help themselves and others!)

2. Explore: Create a Superhero Supply Kit for Your Teeth

- Remind children that just like other superheroes, Tooth Defenders have special powers.
- Review the *Bright Smiles Supply Kit* handout and the model kit with students.
- Show students how to use the handout to creatively organise the oral health powers/tools and their instructions for use in their own superhero kits.

3. Explain: Act like a Tooth Defender

- Give a Tooth Defender Pop Quiz by asking students to name each superhero and identify his /her tool – Paige and Finn (fluoride toothpaste), Kali (toothbrush), and Miguel (Floss).
- Have students divide into small groups based on their favourite Tooth Defender.
- Challenge teams to prepare unique skits dramatising their Tooth Defender's superhero qualities, making sure to include the following information:
 - What is the superhero's power?
 - How is the power used?
 - Why is this power so important for keeping a bright smile?

(Relate each power to how it aids in oral care: brushing away plaque, strengthening teeth with fluoride, removing plaque that brushing may have missed)
- Using their best superhero acting skills and clearest voices, students perform their skits!





MISSION #3

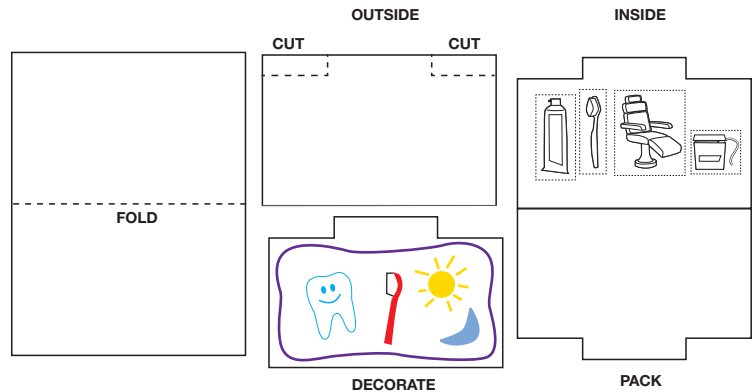
Bright Smiles Supply Kit

Make your own Bright Smiles Supply Kit, equipped with superhero powers!

Child's Name _____

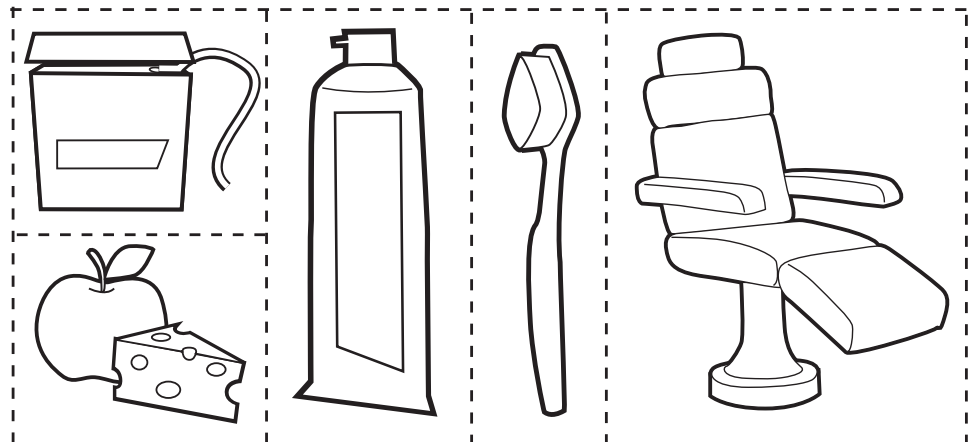
Follow the instructions to make your superhero supply kit!

1. Fold a blank piece of paper in half – this will be your Bright Smiles Supply Kit.
2. On the outside, label and decorate your kit.
3. Cut out the Tooth Defender Powers from this sheet.
4. Colour the powers/tools and paste them into your supply kit.
5. Write instructions for each tool inside your kit – use the How to use the Powers section for ideas.
6. Take your kit home to share with your family!



Tooth Defender Tools:

Cut out each tool/power and paste it in your Bright Smiles Supply Kit.



How to Use the Tools:

Toothbrush Brush twice a day for two minutes.	Toothpaste Use a pea-sized amount each time you brush.	Floss Use this to clean between teeth.	Dental Checkups Visit your dental professional regularly
Healthy Snacks Choose nutritious snacks – they are more tooth-friendly and good for your overall health, too! Limit the number of times you eat snacks each day.			



LESSON 4

The Science of Placulus

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>Through a hands-on scientific exploration, the emerging Tooth Defenders in your class will discover how plaque bacteria grow when they come into contact with sugar. After understanding how sugary foods are weapons for Placulus, students develop a superhero menu of foods to help defend their teeth.</p> <p>Time Required: 30 minutes x 2</p> <p>Prepare the Lesson: For each team One 7g packet of dry yeast One tablespoon of sugar Two clear containers (preferably glass, one cup each) One cup of warm water</p> <p>→ Make copies of Placulus The Villain of Tooth City handout for each student</p>	<ul style="list-style-type: none"> • Understand and explain what causes tooth decay. • Make dietary choices that keep teeth healthy. 	<p>Science</p> <ul style="list-style-type: none"> • Demonstrate ability and understanding of how and why to conduct scientific inquiry. • Carry out investigations in collaboration with other students. • Use scientific discovery to draw conclusions based on observation and analysis. • Understand and describe the change of properties of matter. <p>Maths</p> <ul style="list-style-type: none"> • Generate and represent data by measuring lengths of an object using appropriate tools. • Compare and interpret two sets of data.

1. Engage: It's Invisible!

- Pose the following questions:
 - What does it mean to be invisible?
 - If you were a superhero, would you want to be invisible? What if you were a villain?




2. Explore: Placulus, the Villain of Tooth City

- Tell students that even though we can't see him, Placulus can harm our teeth! Everyone has plaque bacteria in their mouths. This bacteria is microscopic and not visible to the naked eye. But when it mixes with food, it creates plaque acid that attacks teeth and can lead to decay. Plaque builds up over time, and can make teeth feel "fuzzy" and cause a visible film on the teeth. That's why Tooth Defenders are so important!
- Guide your superhero student scientists through the experiment outlined in the Placulus, the Villain of Tooth City handout to observe first-hand how plaque bacteria grow when exposed to sugar.


3. Explain: Scientific Method

- Tell students that each step of the experiment is an important step of the scientific method. Before they begin they will note their predictions for each sample. They will use this data to compare the resulting observations at the conclusion of the experiment. Therefore, encourage them to be precise with their measurements and notes!
- Show students the yeast and explain that it is live bacteria. Though a different type, the plaque in our mouths is also live bacteria. This experiment will show how bacteria react when they come into contact with sugar.



Healthy Snacks at Home

Have students share their recommendations for tooth-friendly snacks with their families. They can also make a family snack log to see how often during the day the family might be experiencing "plaque attacks"!



4. Elaborate: The Science of Placulus (plaque)

- Divide students into teams and ask each team to predict what they think will happen before commencing the experiment. Then let students perform the experiment taking turns with each step.
- Within 8-10 minutes students will observe a frothy foam starting to form on the surface of the container with sugar. After 20 minutes, the foam should grow approximately 4 cm. Although the yeast in the other container grows, it is much less than the one with sugar.
- At the end of 20-30 minutes, ask students to discuss what they noticed about the samples, and describe how they changed. What are their conclusions?
- Review the steps that students can take to minimise tooth decay. Alert them to the Super Power of fluoride toothpaste: it defends teeth against plaque.

5. Evaluate: Combat Placulus with a Smart Snack Decisions

- Review the types of snacks that give Placulus the most power to damage Tooth City: Sweet, sticky snacks. And in addition, these types of snacks offer few or no beneficial nutrients. That's why it's better to choose snacks that are delicious and nutritious, like vegetables, fruits, and dairy products!
- This is a great time to introduce the concept of "frequency" of snacking: Every time you eat a snack, there is a "plaque reaction" that creates acid. The acid lasts for 20 minutes, and can lead to decay. So the **more times** you eat during the day, the **more often** you have harmful plaque acid at work!
- Working in small groups, have students create lists of their favourite healthy snacks that don't give an extra boost to Placulus.
- Display these on the **Bright Smiles Bulletin Board** to make a snack menu fit for superheroes.

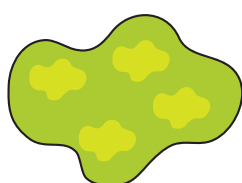
6. Extension: Make Your Plaque Catcher!

- Photocopy the Plaque Catcher on page 17 and hand out to students.
- Review the instructions with students and guide them in assembling their own Plaque Catchers.
- Demonstrate how to make your thumb and index fingers meet to open and close the Plaque Catcher.
- Divide the class into pairs.

Game Rules:

1. One player selects one of the printed squares while the other holds the Plaque Catcher.
2. Open and close the Plaque Catcher in alternating directions while spelling out the letters of the words in the chosen square.
3. Ask the question closest to the chosen square.
4. Look under the flap for the answer.
5. Alternate turns until all questions are answered.

Here's how the villain Placulus causes tooth decay in our mouths:



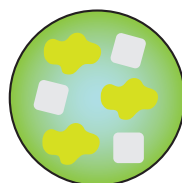
PLAQUE

Bacteria in the mouth.



FOOD

Plaque mixes with food that we eat to launch a "plaque attack." **Sweet, sticky** foods are the most harmful – especially hard lollies that dissolve slowly and stay in the mouth longer.



ACIDS

The "plaque attack" lasts for 20 minutes. It creates acids that can lead to **tooth decay**



ACID



TOOTH ENAMEL



POSSIBLE CAVITIES

IT'S HOW
OFTEN YOU
SNACK
THAT
MATTERS!

5x  **= 20 minutes**
at 1 time of possible
tooth decay

1x  **= 100 minutes**
at 5 different times of possible
tooth decay

Child's Name



MISSION #4

Placulus, the Villain of Tooth City

Use your superhero scientist powers and discover what happens when we don't defend our teeth from Placulus!



with sugar

Here's what you'll need:

- One 7g packet of dry yeast
- one tablespoon of sugar,
- one cup of warm water
- two glass containers



without sugar

1. Powers of Prediction

What do you think will happen when the yeast and sugar mix in the warm water?

- a. The glass of warm water with YEAST ONLY will...
- b. The glass of warm water with YEAST and SUGAR will...

2. Powers of Experimentation

- a. Label containers "With Sugar" and "Without Sugar."
- b. Place equal amounts of yeast in each container.
- c. Add a tablespoon of sugar to the container marked "With Sugar."
- d. Pour half a cup of warm water into each container.
- e. Check the container at 8, 10, 15 and 20 minutes and record your observations.

3. Powers of Observation

Time	With Sugar	Without Sugar
8 minutes		
12 minutes		
15 minutes		
20 minutes		

5. Powers of Prevention

What tools can we use to defend our teeth from Placulus?

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.....

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4. Powers of Discovery

What conclusions can you draw from the experiment?

How could this increase Placulus's power?

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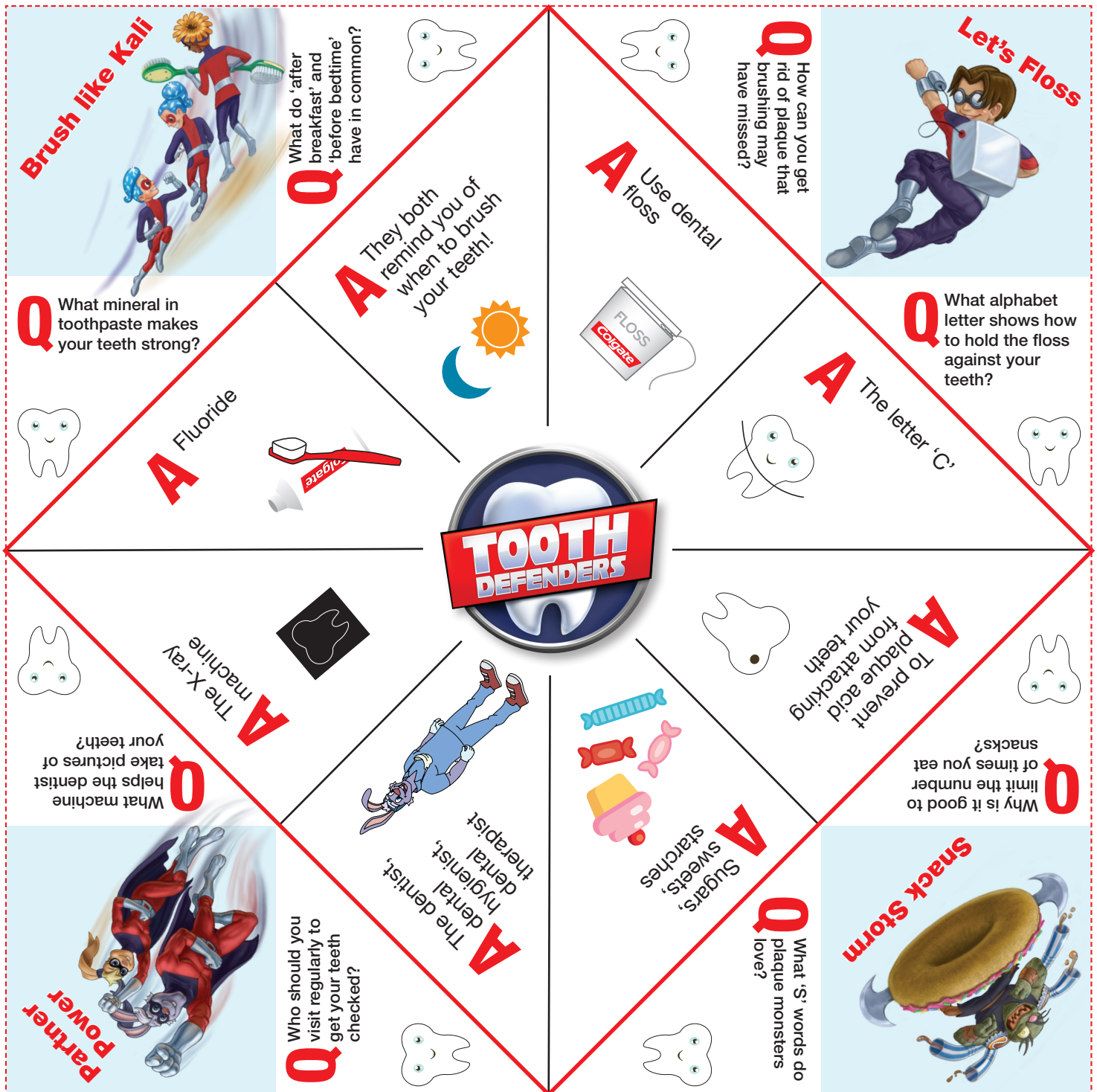
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PLAQUE CATCHER

Folding Instructions:

1. Cut along the dotted lines.
2. Place the Plaque Catcher face down. Fold two corners together to form a triangle. Crease and unfold. Now fold the other two corners together, crease and unfold.
3. Now fold each corner to the centre point.
4. Turn the folded paper over and fold each corner into the centre.
5. Fold the square in half. Unfold it and fold it in half the other way.
6. Using both hands, place your thumbs and index fingers under the flaps.



LESSON 5

Brush Like a Tooth Defender

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>Students learn the best way to get rid of plaque by practicing proper brushing techniques. They get ready to embark on a mission to make Tooth Defender strategies a lifelong habit.</p> <p>Time Required: 30 minutes</p> <p>Prepare the Lesson:</p> <ul style="list-style-type: none"> → Display the Tooth Defenders' Poster where everyone can see it ✓ Clock, watch or timer <p>Note: Tell parents about the 28-day Brushing Chart and ask for their assistance during this important mission!</p>	<ul style="list-style-type: none"> • Practice proper brushing to get rid of plaque and keep teeth strong and healthy. • Practice oral health care by tracking brushing for 28 days. • Share oral health strategies with families. 	<p>English</p> <ul style="list-style-type: none"> • Engage effectively in collaborative discussions with diverse partners, building on others' ideas and expressing their own clearly. • Write routinely over extended time frames for discipline-specific tasks, and purposes. <p>Maths</p> <ul style="list-style-type: none"> • Use operations to add and subtract.



1. Engage: Counting our Pearly Whites

- Challenge your students to guess how many teeth they have.
- Have each student count his/her teeth and record the number on the board.
- Ask students to identify how many primary teeth they have compared to permanent teeth, if they are able to do so. Don't forget that the six year-old molars at the back of the mouth are permanent teeth.
- For a superhero challenge, ask students to think about the design of different teeth and where the names of teeth come from. (explore shapes, names, purpose of different teeth – e.g., incisor, bicuspid, molar, wisdom)

2. Explore: Learn to Brush (and Move) like Kali

- Prepare to brush by miming the application of the correct amount of fluoride toothpaste on the toothbrush (pea-sized amount).
- Following the motions described in the poster, lead children through a mimed practice of proper brushing. List action words describing movements and steps of brushing on the board: *top bottom, inside, outside, front, back – and the tongue!*
- Ask the students to create instructions for how to brush. Make sure they understand how to apply the fluoride toothpaste, know the correct way to brush and for how long.

Extension:

- Split students into small groups. Challenge them to develop a dance step for each brushing action. Then have them create a dance routine using their steps. Their routine must be 2 minutes long, to reflect the proper amount of time to brush.
- Ask groups to perform their dance routine for the rest of the class. (If time allows, have your students perform their dance routine for a younger class (i.e. peer-teach) to share the proper brushing procedure!)
- Alternatively, invite students to work in teams to create a song/poem/haka that teaches the proper brushing steps
- Re-cap by asking these questions:
 - What “powers” (tools) do you need to brush properly?
 - When should you brush?
 - How often should you brush?
 - For how long should you brush?

3. Evaluate: Tooth Defender Training

After learning how to brush like a Tooth Defender, students are ready for their most important mission!

- Distribute the **Training for a Superhero Smile** handout. Explain that students will keep track of their tooth care for 28 days to help remind themselves and their families of the Tooth Defender strategies. Tip: it takes 28 days to build a habit!
- You may decide to send the **Parent Pack** home so all the family can track their brushing too.

















MISSION #5

Training for a Superhero Smile

Track your tooth care at home for 28 days, and you'll be on your way to becoming a Tooth Defender!















Child's Name _____

Tick (✓) each time you brush morning and night:

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>















☐

I used fluoride toothpaste to help strengthen my teeth.

DAY 8	DAY 9	DAY 10	DAY 11	DAY 12	DAY 13	DAY 14
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>















☐

I ate more healthy snacks, and fewer sweet and sticky snacks to help prevent plaque attacks!

DAY 15	DAY 16	DAY 17	DAY 18	DAY 19	DAY 20	DAY 21
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>

☐

I have a dental appointment on _____ (date) .

DAY 22	DAY 23	DAY 24	DAY 25	DAY 26	DAY 27	DAY 28
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>

Key Messages for "Practicing Your Powers"

1. Plaque is bacteria. When it mixes with food, it creates an acid that can attack teeth. Brushing and flossing remove plaque!
2. Brushing with fluoride toothpaste helps strengthen teeth and fight plaque.
3. Brush all surfaces: top, bottom, inside, outside, tongue, and way in the back.
4. Flossing gets the plaque that brushing may have missed. Have a parent help you.
5. Never share your toothbrush. Replace it every 3 months or when it becomes shaggy.

Colgate

BRIGHT SMILES,
BRIGHT FUTURES™



LESSON 6

Chronicle a Tooth Defender

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>With their new powers developing, students watch the video again to learn more about the important role of dental professionals in protecting our teeth. They will recall how a tooth defender can unlock Bright Smiles Super Powers! News reporter, Pearl-E-White is looking for a co-anchor for her daily bulletin. Now your students write themselves into the story.</p> <p>Time Required: 30 minutes x 2</p> <p>Prepare the Lesson: → Make copies of the <i>Life of a Tooth Defender</i> handout for each student</p>	<ul style="list-style-type: none"> Practice daily tooth care with the whole family by completing an oral health tracking chart. Learning the importance of prevention measures for taking care of the body. 	<p>English</p> <ul style="list-style-type: none"> Determine, describe and explain main ideas and concepts presented in orally or through other media. Report on a story with appropriate facts and relevant descriptive details. Write narrative text to express real or imagined experiences or events using appropriate vocabulary, descriptive details, and clear event sequences. Speak audibly and express thoughts, feelings, and ideas clearly. <p>Art</p> <ul style="list-style-type: none"> Use diverse materials to express ideas visually and creatively.



1. Engage: Learning to be a Superhero

- Start by discussing superheroes in general. Invite each student to think about his/her superhero quality, something he/she does to help others. What strengths and positive qualities do they feel they have?

- Ask the following questions:
 - What is your best quality? What are your strengths?
 - How did you acquire your superhero quality?
 - Did someone teach you? Did you learn it yourself? Was it difficult?
 - How do you maintain your superhero quality?

2. Explore: Chronicle a Tooth Defender

- Tell students that Pearl E. White, star Tooth City news reporter and local celebrity, is looking for a nightly news co-anchor, and that they will audition for the role! She wants to do a story on the life of a Tooth Defender and how they became a superhero.
- Have students work in pairs to compose a brief report sharing the life story of a Tooth Defender. Tell them to choose one of the characters to report on. Explain that they will then “audition” to deliver the report as co-anchor, to Tooth

City residents (i.e. the rest of the class). Just like real news reporters, remind students to:

- Include the key information from the story (who, what, where, when, why and how)
- Use important oral health vocabulary they have learned so far (toothbrush, plaque, floss, fluoride)
- Speak clearly

Ask students to first write a draft, then practice before delivering their reports orally to the rest of class. Remind them to share their bright smiles!

3. Extension: Getting to Know the Real Dr. Rabbit

- Set up an interview with a local dental professional to learn how they are partners in oral health.
- Prepare students by starting a class K-W-L chart prior to the visit:

K	W	L
What we already KNOW about dental professionals	What we WANT TO KNOW about dental professionals	After the visit, what we LEARNED about dental professionals

- Ask students to create interview questions they can ask a dental professional.
- Visit a dental clinic or ask a dental professional to come to class as a guest speaker. Have students ask their pre-written interview questions.
- After the visit or presentation, ask students to reflect on what they learned and fill in the “L” of their K-W-L chart.

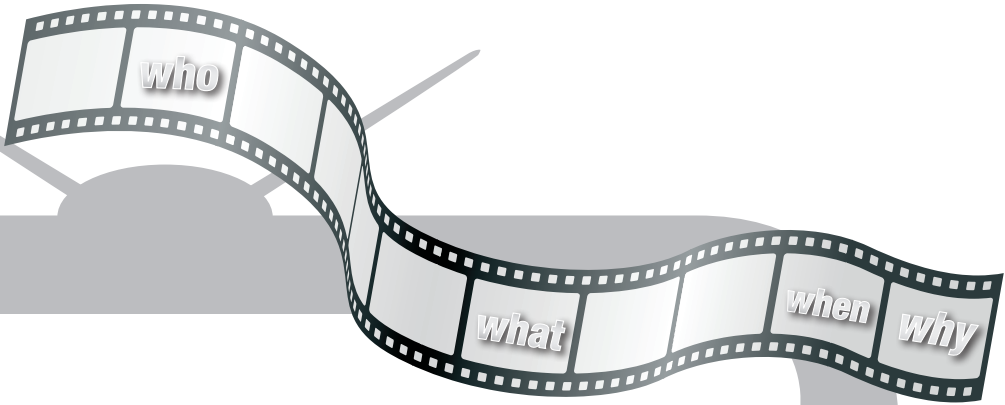


MISSION #6

The Life of a Tooth Defender

Use the worksheet to draft your story

Child's Name



WHO

WHAT

WHEN

WHY

HOW



Colgate®

BRIGHT SMILES,
BRIGHT FUTURES™



LESSON 7

Tooth Defender Graduation

Lesson at a Glance	Oral Health Outcome	Key Learning Area
<p>Students will musically interpret at least one song from the video “Tooth Defender Anthem” or “Placulus Song” and showcase the Tooth Defender strategies they have learned. They plan creative ways to share oral health practices with their friends and family.</p> <p>Time Required: 30 minutes x 2</p> <p>Prepare the Lesson:</p> <ul style="list-style-type: none"> → Cue the Songs on the DVD → Make a copies of the sheet music of the songs → Prepare method for recording the students performance → Make copies of the Bright Smiles Tooth Defender Certificate handout for each student → Coloured pencils, crayons, markers and materials to decorate the Bright Smiles Tooth Defender Certificates 	<ul style="list-style-type: none"> • Summarise key oral health strategies from the Bright Smiles, Bright Futures program. • Communicate their knowledge in a variety of ways. • Students will consolidate their understanding of the role of prevention and making health choices in caring for the body. 	<p>English</p> <ul style="list-style-type: none"> • Students will interact with others to plan, rehearse and present information. • Students will express ideas and explore choices in how to best interpret music and text and how to portray information to an audience.

Ready for Action!

1. Engage: Bright Smiles Forever

- Invite students to share a “Bright Smile Moment” from their Tooth Defender Training
- What is their favourite or most memorable learning experience?
- Ask them how the songs help the messages in the video.
- Ask them to choose a song, or divide the class into two teams and you choose the song for them to interpret.
- Invite the class to sing along while referring to the song lyrics and listening to the music.
- Challenge them to create movement to accompany the songs. If the class has musicians, they may want to play the music.

2. Explore: Share What We’ve Learned

- As official Tooth Defenders, your students can now practice being superheroes who share what they know about maintaining a healthy smile!
- Divide the class into teams, and challenge them to brainstorm additional creative ways of sharing the oral health messages they have learned. Examples could be a puppet show, mural, a play, posters, original books, etc.
- Have teams prepare their project and performance to share with other classes, friends and family at the **Tooth Defenders Graduation!**

3. Elaborate: Tooth Defenders Graduation Certificate

- Just like the Tooth Defender Superheroes, your students will receive a certificate to complete their training.
- Distribute the **Bright Smiles Tooth Defender Certificate** handout.
 - Have the Tooth Defenders illustrate and write the strategies they have learnt about defending their smiles.
 - Have students write their names on the certificate and hand them in.

4. Evaluate:

- Invite family members, friends, and other students to celebrate oral health.
- Encourage students to show off their work on the **Bright Smiles Bulletin Board**.
 - Have teams share the Graduation project they have developed to teach Tooth Defender Strategies.
 - Create a Bright Smiles Graduation ceremony for awarding the completed certificates.

Tooth Defenders at Home

Invite families to come celebrate the Tooth Defenders Graduation. Ask for their support in continuing the quest for good oral health at home.



TOOTH DEFENDER CERTIFICATE

BRIGHT SMILES SUPER POWERS LABORATORY

This is to certify that

.....
(Name of Tooth Defender)

has joined the ranks of Tooth Defender Superheroes and is ready
to teach others about protecting a healthy smile.

.....
Date

.....
Superhero Trainer/Teacher



How To Handle a Dental Emergency

Knocked-out tooth

- Bring the child and tooth to a dental professional immediately.
- Place the tooth in a container of milk, salt water, or the child's saliva.
- If these are unavailable, use plain water.
- If you are unable to get to the dental professional immediately:
 - Gently rinse the tooth in warm water. Do not touch the root.
 - Permanent tooth: Carefully insert the tooth back in place.
 - Baby tooth: Do not try to pack a baby tooth back into its socket. Place it in cold milk or water and bring it with you to the dental professional.
- See your dental professional within 30 minutes if possible.

Broken tooth

- Gently clean dirt or debris from injured area with warm water.
- Place cold compresses on the face, in the area of the injured tooth, to minimise swelling.
- Apply direct pressure to the bleeding area with a clean cloth.
- Go to the dental professional immediately.

Toothache

- Rinse out mouth with warm water.
- Use dental floss to remove any food trapped between teeth. If there's swelling, place cold compresses on the outside of the cheek. Do not use heat or place aspirin on aching tooth or gums.
- See dental professional as soon as possible.

Bitten lip or tongue

- Apply direct pressure to the bleeding area with a clean cloth.
- If swelling is present, apply cold compresses.
- If bleeding continues, go to a hospital emergency department.

Health Watch

IN CASE OF INJURY...

- Keep calm and always be reassuring to the child.
- Stop or control any bleeding (by applying pressure).
- Notify parents or caregiver.
- Child should see a dental professional to check the tooth or injured area.