Dr. d’s Max’s Adventures: Teacher Discussion & STEM Guide Series

Supporting Science, Creativity, and Curiosity for Young Learners (Ages 4–8)

Created for classroom / homeschooling use |

🎓 **Max’s Adventures Educational Series**

Teacher Discussion & STEM Guides

About This Series:

- The ***Max’s Adventures Educational Series***® combines **storytelling**, **imagination**, and **science** to inspire curiosity and creativity in young learners.
- Each short, 3D-animated episode, explores a real-world science idea through humor, heart, and hands-on discovery.
- These Teacher Guides are designed to help educators and parents connect each story to fun science learning experiences that align with **Next Generation Science Standards (NGSS)** for early elementary learners.

Episode Title: *The Great Brushoff!*

About This Resource:

This Teacher Guide supports the animated episode *The Great Brushoff!* — where Max discovers the science behind cavities, bacteria, and healthy habits. With help from Mom (and a mischievous candy villain named Captain Cavity), Max learns how sugar affects teeth and why brushing keeps our teeth strong.

This lesson helps children explore **cause and effect**, **human health**, and **simple engineering solutions** that keep the body working properly. Discussion questions and hands-on STEM activities reinforce NGSS connections and make dental science fun and accessible for young learners.

Includes:

- Discussion questions that promote observation, reasoning, and problem-solving.

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- Simple STEM or creative design challenges that support Next Generation Science Standards (K–2).
- Reflection prompts that help children link science to everyday experiences.

Use this guide for:

🧠 Classroom instruction
🏡 Homeschool learning
🎨 Group science activities
🗣 Discussion and reflection time

Discussion Questions

1. **What happened when Max didn't brush his teeth?**
   What do you think caused Captain Cavity to appear?
2. **What is a cavity, and how does it form?**
   How does sugar affect our teeth?
3. **Why do we need to brush our teeth every day?**
   What tools help us keep our teeth healthy?
4. **How could Max have prevented Captain Cavity from growing?**
   What would you tell Max to do differently next time?
5. **What are some foods that help our teeth stay strong?**
   Which snacks are "tooth-friendly" and which are not?
6. **If you were a scientist, how would you design a "Super Toothbrush"?**
   What special powers would it have to fight cavities?

STEM Activities

1. Build Your Own Super Toothbrush!

Goal: Encourage creativity and problem-solving by designing tools for healthy habits.
Materials: Pipe cleaners, cardboard, straws, sponges, foil, tape, markers.
Instructions:

- Build a model toothbrush that could "fight cavities."
- Name your invention and explain how it works.
  Science Link: Engineering Design – how tools solve real problems.

🍭 2. Sugar Science Experiment

Goal: Observe how sugar affects tooth enamel using eggs as models.
Materials: 2 hard-boiled eggs, soda or juice, water, toothbrush, toothpaste.
Instructions:

- Place one egg in soda and one in water overnight.
- Compare the results and gently brush the soda egg.
  Science Link: Cause and effect – how acid and sugar weaken enamel.

🎯 Extension Idea – The "Cavity Defense" Game

- Use beanbags or paper "sugar cubes" as "cavity bugs."
- One student plays Max with a pool-noodle toothbrush.
- Others toss the sugar cubes — Max brushes them away!
  Reinforces: Brushing as a daily defense system.

Teacher Reference: Sample Discussion Answers

1. **When Max didn't brush:** Sugar stayed on his teeth, and bacteria made acid that causes cavities.
2. **Cavity:** A tiny hole in a tooth caused by acid eating away enamel.
3. **Brushing daily:** Removes sugar, bacteria, and plaque; keeps teeth strong.
4. **Preventing Captain Cavity:** Brush, floss, eat fewer sweets.
5. **Healthy foods:** Apples, carrots, cheese, milk, water; avoid sticky sweets.
6. **Super Toothbrush ideas:** Singing reminders, lights, or lasers — apply engineering design!

Max's Adventures: Teacher Notes & Key Takeaways

Key Science Ideas to Reinforce

Use this space to summarize what students learned through discussion and activity:

- Cause and effect — how one action leads to another.
- Engineering and problem-solving — how we can design tools to improve our world.
- Human choices and their impact — staying healthy and protecting our environment.
- Communication — using science words to describe observations and feelings.

Teacher Reflection Notes

Optional section for educators to record class observations:

Extension Ideas for Next Time

- Read a related storybook or nonfiction text that connects with Max's lesson.
- Invite a community helper (like a dentist, scientist, or engineer) to visit.
- Create a class poster showing what students learned through Max's adventure.
- Encourage students to write or draw their own "Max's Adventure" based on a science idea.

Wrap-Up Thought for Educators

Every *Max's Adventures* story connects science with heart — helping children see that curiosity, empathy, and problem-solving all work together to make the world a better place.