Self-Guided Tour
Teacher Resources
Grades K-12

FIND YOUR SMILE

University of Maryland
School of Dentistry
Dr. Samuel D. Harris
National Museum of Dentistry

Smithsonian Institution
Affiliations Program
Discover the power of a **healthy smile** with a trip to the **National Museum of Dentistry!**

An Affiliate of the Smithsonian Institution, the National Museum of Dentistry is renowned for its collection of dental-related treasures from the legendary to the whimsical, from George Washington’s not-so-wooden teeth to toothbrushes through the ages.

A visit to the National Museum of Dentistry is a fascinating, fun, smile-inspiring experience where students learn the important role oral health plays in a healthy life. Hands-on programs and interactive exhibits offer educational activities that meet national education standards.

Use this booklet as a resource in planning your self-guided tour of the museum. Included in this packet is information about each exhibit, including national standards, ways to involve students along the tour, and where to get more information to prepare your students for their tour.
The National Education Standards below correspond to the respective standards found in NHES, NSES, NCSS, NCTE/IRA, and NETS/ISTE guidelines.

### National Standards: K-12

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First Floor Highlights

A. Teeth in Popular Culture
B. Animals and Their Teeth
C. Prevention Gallery
D. MouthPower®
E. Providing Care

Second Floor Highlights

F. Providing Care
G. George Washington Gallery
H. American Dental Association Theater
I. Your Spitting Image: Bioengineering: Making a New You
J. The Future is Now!: African Americans in Dentistry
K. Marvelous Mouth
L. Narwhal: A Whale of a Tooth
M. Reading Corner: Terrific Tooth Tales

Additional Galleries:

- Forensics: Solving Mysteries
- Saliva: A Remarkable Fluid
A Teeth in Popular Culture

Highlights:

Ready, Set, Smile
Let our Smile Cam capture your best smile and display it on our celebrity smile wall.

Hollywood Dentists
Watch movie clips with teeth storylines and learn about some pretty teeth-centric individuals.

Faith, Folklore, and Magic
See how different cultures have viewed what makes teeth beautiful.

Andy Warhol’s St. Apollonia
After refusing to renounce her Christian faith, the Roman Empire extracted all her teeth. In 300 A.D. she became a saint and in 1984 Warhol made her a work of art.

Witness amazing teeth feats, marvel at unique cultural teeth traditions, and trace what humans have done to their teeth throughout history. Learn how important smiles are for recognizing people, watch unbelievable “teeth feat” performances, and realize how teeth have made their way into popular culture for centuries.

Suggestions to Involve Students:

- Press Button 7 at the TV screen to watch Teeth Feats to discover what amazing things people have done using just their teeth.

- Ask students ways people have changed the appearance of their smiles, and if there are any current popular trends involving altering teeth.

- Use our celebrity smile wall to discuss what healthy and unhealthy smiles look like.

Who is the "Iron Jaw" performer?
Exhibit Features

Animals and Their Teeth

Learn how your mouth compares to a shark or a horse. Analyze skulls from across the animal kingdom to figure out what they eat, if they have had more sets of teeth than you, and why every animal has a different smile.

Suggestions to Involve Students:

- Have students play a game trying to determine which animals are herbivores, carnivores, or omnivores. Ask them how they know what the animal ate.

- Look at the size and shapes of the animal teeth to determine the animal’s diet.

- Ask students to describe how shark teeth develop differently from ours.

What is the scientific name for baby teeth?

Highlights:

Animal Skulls
Learn about the teeth of the animal kingdom straight from the horse's mouth...and of course other animals' mouths as well.

Carcharodon rondeletii Tooth Fossil
Measuring 4 inches wide and 5 inches long, this tooth comes from the ancestor of the Carcharodon carcharias, more commonly known as the Great White Shark.

Mighty Mouth
These motor molars allow years of research to be done in just a few weeks by simulating the chewing process. Watch this motor mouth in action to see what happens when you chew.
Discover how the focus of dentistry has changed from extraction to prevention, witness how toothbrushes, toothpastes, and mouthwashes have evolved from a chew stick to what is in your bathroom, and revisit catchy commercial jingles for dental products on the world’s only Tooth Jukebox.

**Suggestions to Involve Students:**

- Compare and contrast the toothbrush exhibit to the toothbrushes the students use today. How are they alike? How are they different?

- Have students describe what dental products they use to maintain a healthy smile.

- Ask students why so many dental products are made to look like cartoon characters?

**Why should you have sealant on your teeth?**

**Highlights:**

**Toothbrushes**
From Mickey Mouse to Fred Flintstone, and rotating heads to pig bristles, discover what famous cartoons became toothbrushes and what some toothbrushes were actually made of.

**Tooth Jukebox**
A jukebox like no other in the world, revisit commercials and jingles for dental products from some of the biggest names in the business.

**Her Majesty’s Crowns**
A collection of dental instruments used by Sir Edwin Saunders, the first dentist to be knighted, on Her Majesty Queen Victoria of England.
Explore Mouthie’s interactive laboratory to get the inside story on the best way to have a happy mouth for life. Don your lab coat and learn the parts of the tooth, practice brushing and flossing on a larger-than-life mouth, explore healthy eating, and discover how tobacco harms your teeth.

**Suggestions to Involve Students:**

- Discuss how to brush and floss properly. Have student volunteers assist. Use Mouthie’s tips located in the exhibit to demonstrate good brushing and flossing habits.

- Allow students to self-explore. Ask individual students questions to enhance their learning experience.

- Ask students the different types of food they should eat to not only stay healthy, but to have a healthy mouth as well.

**What are the different parts of the tooth?**

Visit Mouthie’s online lab at [www.mouthpower-nmd.com](http://www.mouthpower-nmd.com)
Exhibit Features

Providing Care

From ancient cultures to the modern dental office, unearth the progression of people and their teeth. Learn about the world’s first dental college, the “Father of Modern Dentistry,” and what dentists have done in their free time.

Highlights:

Etruscan Bridge
Everyone wants a perfect smile with no missing teeth, even the Etruscans, an ancient civilization from Italy that predates the Romans. Instead of dentures, they would “bridge” the gap between teeth by connecting replacement teeth to the remaining teeth using gold bands.

Antique Anesthetic Needles
Laughing gas and Xylocaine were not always options for numbing the pain. Different anesthetics from the drug cocaine to different chemical combinations were used to numb the mouth before painful procedures.

Suggestions to Involve Students:

- Discuss how tools and dental offices have changed through time. What do they see that is in their dentist’s office today? What is different?

- Ask the student what other occupations dentists used to have, and how they were related to dentistry?

- Ask students if there is anything they have seen that would have caused people to be scared of visiting the dentist? How has it become less scary?

Where was the first dental school in the world?
Immerse yourself in an 18th century presidential parlor; discover what the first President of the United States had to go through because of problems with his mouth and learn about Dr. John Greenwood, the man behind Washington's smile.

Suggestions to Involve Students:

- Have students try to guess what Washington's dentures were made from. Talk about how the material of dentures has changed.

- Discuss how comfortable colonial dentures would have been.

- Discuss why George Washington's face looks so different in different paintings.

We cannot tell a lie. He never had wooden teeth.

Contrary to popular belief, Washington never wore wooden dentures and, more than likely, neither did anyone in America. Instead, his dentures were made primarily of ivory (most likely from hippopotamus) and used gold springs to hold them in place. Washington also had several pairs of dentures made, some from his favorite dentist, Dr. John Greenwood, and others from artists Charles Wilson Peale and his son Rembrandt.

Why did George Washington give the shortest inaugural address to date?
Enjoy a variety of fun and educational clips about oral health, the field of dentistry, and the how and why behind taking care of your mouth! Walk right in and use our touchscreen projector to choose your topic of choice.

Suggestions to Involve Students:

- Choose Dental PSAs and discuss why the field of dentistry wanted celebrities and cartoons to promote oral health
- Choose How and Why You Should Take Care of Your Mouth and have students follow along with toothbrushes and floss to learn how to take care of their smiles.
- Choose Being a Dentist and discuss what it takes to become a dentist or dental specialist.

Who can become a dentist?
Your Spitting Image is the first museum exhibition to focus on the cutting-edge research that is changing the face of dentistry. This innovative and interactive three-part exhibition highlights saliva, forensics, and bioengineering, exploring how emerging science will affect dentistry and overall well-being in the not-so-distant future.

**Suggestions to Involve Students:**

- Elementary students can work in small groups to complete the family activity together in Forensics: Solving Mysteries.
- Have students discuss the implications of the research in Bioengineering: Making a New You.
- Discuss what saliva is and why students might need it in Saliva: A Remarkable Fluid.

**Have you ever had a tooth replaced? How was it done?**

**Forensics: Solving Mysteries**
Become a member of a disaster recovery team and learn how to identify victims through dental forensics by analyzing skull structures, creating dental charts, or extracting DNA from teeth.

**Bioengineering: Making a New You**
Explore exciting research that will affect the future of dentistry and public oral health. Discover the history of tooth replacement, learn about cutting-edge research being done to grow replacement teeth, and ways that genes are being used to fight disease.

**Saliva: A Remarkable Fluid**
Take part in an interactive odyssey through the mouth, and familiarize yourself with the liquid that protects your teeth, aids in digestion, and improves your sense of taste. Uncover what saliva is made of, how it works in the body, and what happens to your oral health and overall health if the salivary glands are impaired.
Celebrate the rich heritage of African Americans in dentistry through one of the museum’s traveling exhibitions. Discover key individuals, institutions, and organizations that reshaped the social and political landscape of oral health care.

Suggestions to Involve Students:

- Discuss the concept of fairness and what the word fair means to them.
- Discuss why schools like the Howard University College of Dentistry and Meharry medical College School of Dentistry existed.
- Discuss why many of the dates mentioned in the exhibit took place after the Civil War.

**Who was the first African American to graduate from an accredited dental college in the United States?**
Explore how to take care of braces, how mouth guards protect teeth during sports, why oral piercings and tobacco use can lead to tooth trouble, and what careers are possible in the world of dentistry with hands-on models and a fun interactive computer game that reveals tooth truths that will keep kids smiling for a lifetime.

Suggestions to Involve Students:

- Let students work in pairs or small groups to explore *The Marvelous Mouth* interactive.
- Discuss the dangers of tobacco and drug use to oral health.
- Compare and contrast how to clean your mouth when you have braces to how to clean your mouth when you don't have braces.

*Do you know someone who has or had braces?*
Immerse yourself in the world of narwhals. Discover ancient myths and recently uncovered facts relating to this curious creature with a single straight tusk that can grow up to 9 feet long.

Suggestions to Involve Students:

- Discuss what other animals, real and mythical, have a "horn" on their heads.
- Discuss what a narwhal uses its long tooth for. Is it the same as what you use your teeth for?
- What other origin legends do you know of? Why were these stories created?

**Do all narwhals grow a tusk?**
Teeth in Popular Culture

Teeth are all around us. Different cultures and religions find teeth very important. Teeth also help us recognize celebrities and allow some people to do amazing feats. Try to complete this activity sheet while you are looking at the exhibit.

How many famous people do you recognize on the Wall of Smiles? Write down two people you know and what you notice about their smiles.

__________________________________________________________________________

__________________________________________________________________________

Look at Penny Wilson hanging from the ceiling. How is she using her teeth?

__________________________________________________________________________

Find the exhibit panel, Traditional Ornaments and Cutting-Edge Fashion. Look and the four people and think about why their teeth and smiles are different. Write your guess in the chart below before you read the panel to find out why the teeth are different.

<table>
<thead>
<tr>
<th>Person</th>
<th>What do you think they did to their teeth?</th>
<th>Why are their teeth and smile different?</th>
</tr>
</thead>
<tbody>
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</table>

Write down one extra fact you learned in the exhibit.

__________________________________________________________________________

After looking at the exhibit, what is something you would like to learn more about?
Animals and Their Teeth

Animals have different types of teeth to eat different types of food. An animal’s teeth determines its diet. Think about animals you know. What kind of teeth do they have? What do these teeth let them eat? Fill out the chart about different types of animals. Make sure to have at least one carnivore, herbivore, and omnivore. You may draw or write the name of the animals you choose.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Carnivore, Herbivore or Omnivore?</th>
<th>Type of Teeth</th>
<th>Why It Needs These Teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>carnivore</td>
<td>Sharp Teeth (canines and incisors)</td>
<td>To tear and cut meat</td>
</tr>
</tbody>
</table>
The Prevention Gallery

Press #4 on the Tooth Jukebox to see a few toothbrush commercials. Does your toothbrush look like the ones in the commercials? Why or why not?

Take a look at the toothbrushes on display. See how many different shaped toothbrushes you can find. Locate toothbrush #3 and #21. How could you use these toothbrushes to brush your teeth?

Read *Branches, Bristles, and Batteries*. Why did nylon become the material used to make bristles?

Can you find the oldest toothbrush on display? The newest?

Return to the Tooth Jukebox. Press #6 to watch classic toothpaste commercials. Which commercial did the best job in advertising its product? How?

Look at the display of toothpastes and toothpowders. See how many different toothpaste and toothpowder containers you can find. Which is the most interesting?

Where was toothpaste first manufactured in tubes? How much longer did it take for this process to reach the United States?

Who was the first dentist to advocate that floss should be used to improve our oral health?

Look at the various types of mouthwashes. Would you rather use a modern mouthwash or an older version? Why?
Providing Care

A visit to the dentist has changed over the years. Compare and contrast a visit to the dentist in the 1800s to a visit today. Think about who could be a dentist, what instruments were used, and how to take care of your teeth. You may draw or write your answer.

<table>
<thead>
<tr>
<th>1800s</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="1800s dentistry equipment" /></td>
<td><img src="image2.png" alt="Modern dentistry equipment" /></td>
</tr>
</tbody>
</table>

Name: ________________________________________________ Date: ______________________
Providing Care

How is dentistry different today from other times in history? Choose either a tool or technology that has been used in dentistry. Write about the tool or technology including when it was discovered, how it was first used, how it is used today, and how it may be used in the future.

Tool or technology: ____________________________________________________________

When it was discovered: _______________________________________________________

First uses for it: ______________________________________________________________

___________________________________________________________________________
___________________________________________________________________________

Is it still used today? Why or why not? How is it used? _____________________________

___________________________________________________________________________
___________________________________________________________________________

How may it be used in the future? ______________________________________________

___________________________________________________________________________
___________________________________________________________________________

Reference: __________________________________________________________________
If you had the opportunity to be part of a DMORT Team, what role would you like to play? Why?

Find the Identification: Anthropology section of the exhibit. How can a skull be used to identify a person?

Locate Identification: Dentistry. How do odontologists use dental charts and radiographs to identify someone?

Look at the Solving Crimes panel. How can bitemarks help solve crimes?

Go to Identification: DNA. When is DNA testing used to identify a person?

Read the bioengineering exhibit panel, Growing Teeth. Why are dental researchers using stem cells in their investigations?

Discover the exhibit panel, Finding a Cure. How can salivary glands play a role in gene therapeutics?

Read I’ve Lost a Tooth. If you lose a tooth in the future, how might you be able to replace it?