

Self-Guided Tour Teacher Resources

Grades K-12



The Dr. Samuel D. Harris
**NATIONAL
MUSEUM of
DENTISTRY**

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**NATIONAL
MUSEUM of
DENTISTRY**

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.



Online Resources



To help prepare you students for a trip to the National Museum of Dentistry, use our website for lesson plans, glossary, resources, and pre- and post-visit activities. You may access our online resources at www.dentalmuseum.org/school-tours/supplemental/index.cfm. The supplemental activities page is divided into two parts: 1) elementary and 2) middle and high school activities. For elementary children, there is a set of lesson plans for our *MouthPower*[®] exhibit. Middle and high school teachers can find lesson plans to supplement the *Your Spitting Image* exhibit. There are two scavenger hunts for the museum as well.

In addition to lesson plans, there are two online activities for students to access.

MouthPower[®] Online

Discover the power of a healthy smile at www.MouthPower.org! Now available in English and Spanish. What is the secret to a healthy smile? Taking good care of your teeth! Explore Mouthie's online laboratory to learn about how to brush your teeth, what tobacco can do to your mouth, and how to make healthy food choices. MouthPower[®] Online is an entertaining and educational web experience developed by The Dr. Samuel D. Harris National Museum of Dentistry in partnership with the American Dental Association.



"I Cannot Tell a Lie"

Visit www.dentalmuseum.org/GW/index.htm to learn about George Washington and his teeth. Read historical facts, take quizzes, and listen to written correspondence between Washington and his favorite dentist, John Greenwood.



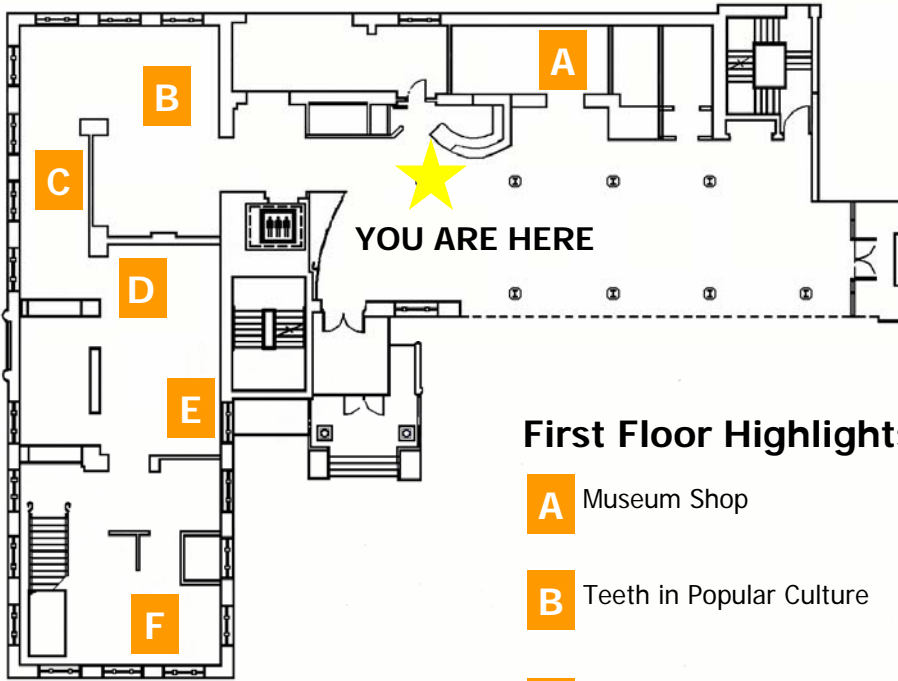
National Education Standards

National Standards: K-5				
Exhibits	Health	Science	Social Studies	Language Arts
Teeth in Popular Culture			I	VI, VII, XI, XII
Animal Teeth		C		
History of Dentistry		E, F, G	II, V, VIII	VI, VII, XI, XII
MouthPower®	1, 2, 3	C, F		VI, XI, XII
George Washington			V	VI, VII, XI, XII
Narwhal		C		VI, XI, XII
ADA Theater: <i>Dudley Visits the Dentist</i> Video	1, 2, 3	C, F		

National Standards: 6-12					
Exhibits	Health	Science	Social Studies	Language Arts	Technology
Teeth in Popular Culture			I	VI, VII, XI, XII	
Animal Teeth		C		VI, VII, XI, XII	
History of Dentistry		E, F, G	II, V, VIII	VI, VII, XI, XII	
George Washington			V	VI, VII, XI, XII	
Your Spitting Image: Forensics		A, C, E, F, G	VIII	VI, VII, XI, XII	II
Your Spitting Image: Bioengineering	4	C, E, F, G	VIII	VI, VII, XI, XII	II
Your Spitting Image: Saliva	4	C, E, F, G		VI, VII, XI, XII	II

Museum Map

First Floor



First Floor Highlights

- A** Museum Shop
- B** Teeth in Popular Culture
- C** Animals and Their Teeth
- D** Prevention Gallery
- E** MouthPower[®]
- F** The History of Dentistry

Second Floor



Second Floor Highlights

- G** The History of Dentistry
- H** George Washington Gallery
- I** American Dental Association Theater
- J** Your Spitting Image
Bioengineering: Making a New You
Forensics: Solving Mysteries
- K** Marvelous Mouth
- L** Your Spitting Image
Saliva: A Remarkable Fluid

Exhibit Features

B Teeth in Popular Culture

What You Will Do:

Have you ever wondered what people have been able to do with their teeth? See Penny Wilson, an iron-jaw circus performer. Discover other uses for your teeth and smile by playing a game at the Wall of Smiles or watching a short video. Learn how teeth are important to different religions around the world. Explore how different cultures around the world have changed the appearance of their smiles for different reasons.

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.
- Have students answer questions on the activity sheet on p. 12.



C Animals and Their Teeth



What You Will Do:

Learn how mammals shed their teeth. See if your tooth development is the same as other animals. Discover why different teeth are needed to eat different kinds of food. Try to find omnivores, carnivores, and herbivores based on their teeth.

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.
- Complete activity sheet at school either before or after your visit (located on pg. 13).

D Prevention Gallery

What You Will Do:

Explore how dentistry changed from extraction to prevention. Learn how fluoride and sealants help to prevent tooth decay. Discover how dental hygiene became an important profession after the rise in prevention methods. See toothbrushes, toothpastes, and mouthwashes as they have evolved through time. Check out the world's only Tooth Jukebox, playing vintage television commercials for dental products from the 1950s to the 1990s.



Suggestions to Involve Students:

- Use the activity sheet on p. 14 for older students to answer using the Tooth Jukebox and exhibits.
- For younger students, compare and contrast the toothbrush exhibit to the toothbrushes they use today. How are they alike? How are they different?
- Have students describe what they use to keep their teeth in tip-top shape (fluoride, sealants, toothbrush, toothpaste).

E MouthPower®



What You Will Do:

Explore Mouthie's interactive laboratory to get the inside story on the best way to have a happy mouth for life. 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. Dress up and role play dentist in a child-size "dental office."

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.
- Use teacher lesson plans for pre- and post-visit activities (see Online Resources) .
- Visit www.MouthPower.org before or after your visit.



F

G

The History of Dentistry



What You Will Do:

Discover how ancient cultures took care of their teeth. Learn about the tooth worm, the supposed villain of tooth decay according to a 1,000 year-old theory. Find out about the first dental school in the world, the Baltimore College of Dental Surgery. See how dental schools have changed and explore program options at various dental schools in the *Celebrate Dental Education* exhibit. Students can trace the evolution of dental technology as they move through the Museum, from the hand-forged iron tools of the early American itinerant dentists to the latest dental equipment in the Modern Dental Office.

Do you have silver fillings in your mouth? If so, you can thank G. V. Black. He not only invented the way that your cavity was filled, but he figured out the perfect formulation for the material that filled it—more than 100 years ago. See a life-size figure of Dr. Black in a re-creation of his office, including his dental chair and cabinet, plus interact with a touchscreen computer exploration of his life and profound impact he made on modern dentistry.

Suggestions to Involve Students:

- For elementary 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?
- Younger students can compare and contrast dentistry today to long ago on an activity page located on pg. 15. This may be completed at the museum or in the classroom.
- For older students, allow them to explore the exhibit on their own. They may complete the activity sheet on pg. 16 in the classroom.

H

George Washington Gallery

What You Will Do:

Contrary to popular belief, the nation's first president never wore wooden teeth. Decorated like an 18th-century presidential parlor, the gallery features Washington's ivory denture, as well as displays about his favorite dentist and portraits that reveal the impact of his tooth troubles.



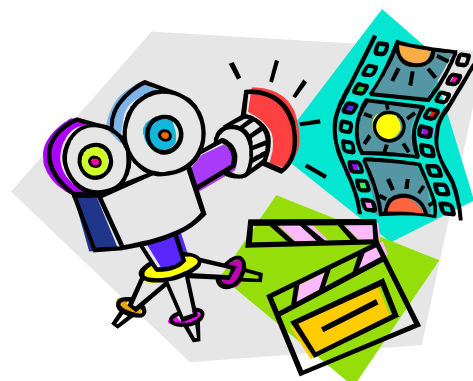
Suggestions to Involve Students:

- 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.
- Go onto the George Washington online activity after your visit to learn more about George Washington and colonial dentistry (see Online Resources).

American Dental Association Theater

What You Will Do:

The ADA Theater provides an area within the museum to view videos with various dental themes.



Title	Length	Age Group	National Education Standard
Adventures of Timmy the Tooth	30 min.	3-8	Science—C,F, Health—1, 2, 3
All About Dentistry	19 min.	3-9	Science—C, F, Health—1, 2, 3
Bright Smiles, Bright Futures	24 min.		Science—C, F, Health—1, 2, 3
Brushing Magic	6 min.	3-10	Science—F, Health—1, 3
The Dangers of Smoking	12 min.	12-16	Science—F, Health—3
Dr. Rabbit	13 min.	3-12	Science—C, F, Health—1, 2, 3
Dr. Rabbit	14 min.	3-12	Science—C, F, Health—1, 2, 3
Dudley's Classroom Adventure	9 min.	3-10	Science—C, F, Health—1, 3
Dudley Visits the Dentist	8 min.	2-8	Science—C, F, Health—1, 2, 3
Gena's Adventure	8 min.	3-10	Science—F, Health—1, 3
Give Your Mouth a Sporting Chance	10 min.	12 +	Science—F, Health—1, 3
Mouth Museum	7 min.	5-13	Science—F, Health—1, 3
My First Dental Visit	11 min.	3-8	Science—F, Health—1, 2, 3
Protect Your Winning Smile	9 min.	3-8	Science—F, Health—1, 3
Protect Your Winning Smile	12 min.	8 +	Science—F, Health—1, 3
Tobacco Trouble	13 min.	5-9	Science—F, Health—3
Tobacco—What About It?	13 min.	9-14	Science—F, Health—3
Video Project	8 min.	6-13	Science—F, Health—1, 3
Watch Your Mouth	12 min.	8-15	Science—F, Health—1, 3
Wear a Custom Mouth Guard	9 min.	12 +	Science—F, Health—1, 3
Why Kids Smoke	25 min.	9-15	Science—F, Health—3

J

Your Spitting Image

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.

Forensics: Solving Mysteries

What You Will Do:

Step into the role of a member of a disaster recovery team and learn how to identify victims of a mass disaster. Discover how to identify gender and race from skull structure, create dental charts, and analyze radiographs to make identifications. Then explore how extracted DNA from teeth can identify victims in the absence of medical records.



Suggestions to Involve Students:

- Use teacher lesson plans for pre- and post-visit activities (see Online Resources).
- Elementary students can work in small groups to complete the family activity together. All supplies for the activity are located in the gallery.
- Middle School and High School students may complete activity sheet located on p. 17. The activity sheet covers both *Forensics* and *Bioengineering*.

Bioengineering: Making a New You

What You Will Do:

Did you ever wish you could grow a tooth? 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.



Suggestions to Involve Students:

- Have students explore interactives on their own.
- Have groups discuss the implications of this research to their oral health in the future.
- Complete post-visit lesson with students in the classroom (see Online Resources).

K Marvelous Mouth

What You Will Do:

The Marvelous Mouth uses animation to teach important facts of brushing, flossing, fluoride, whitening/bleaching, sealants, mouth guards, tooth development and anatomy, the dangers of oral piercing, tobacco use and oral cancer. *The Marvelous Mouth* also explores careers in dentistry and the importance of oral health in overall health.



Suggestions to Involve Students:

- Let students work in pairs or small groups to explore *The Marvelous Mouth* interactive (there are 3 computers to use).
- Children may read books or complete activities located in the exhibit space.

L Your Spitting Image



Saliva: A Remarkable Fluid

What You Will Do:

Students are taken on an interactive odyssey through their mouths, introducing them to the liquid that protects their teeth, aids in digestion, and improves their sense of taste. Learn what saliva is made of, how it works in the body, and what happens to their oral health and overall health if the salivary glands ever become impaired.

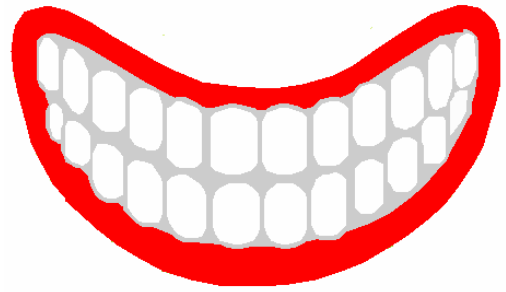
Suggestions to Involve Students:

- Older students can explore the interactives on their own.
- For middle and high school students, download worksheets to use in the exhibit (see Online Resources).
- For younger children, discuss what saliva is and why they might need it. Allow them to check out their saliva in the mirror and explore what is in saliva under the magnifying glasses.

Name: _____ Date: _____

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 at 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.

Person	What do you think they did to their teeth?	Why are their teeth and smile different?


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.

Animal	Carnivore, Herbivore or Omnivore?	Type of Teeth	Why It Needs These Teeth
 Dog	carnivore	Sharp Teeth (canines and incisors)	To tear and cut meat

Name: _____ Date: _____

Toothbrushes, Toothpaste, and More

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?

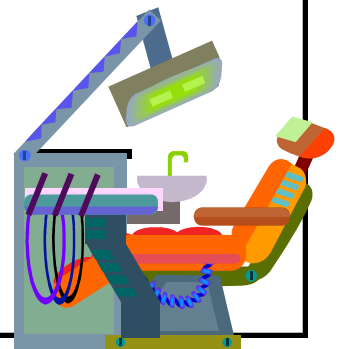
Look at the various types of mouthwashes. Would you rather use a modern mouthwash or an older version? Why?

A VISIT TO THE DENTIST

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.

1800s

Today



Name: _____ Date: _____

The History of Dentistry

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:

Name: _____ Date: _____

Your Spitting Image

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 bite marks 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?



Planning Your Trip

Schedule a Tour

To schedule a self-guided tour, contact us at 410/706-9599.

Fees

\$2 per students (minimum of 10 students)

All teachers are free with their group. One chaperone is admitted free with every 10 students. Each additional chaperone is \$2. One chaperone per 10 students is required for self-guided tours.

Payment for the trip can be made in advance or on the day of arrival. Advance payment resulting in overpayment cannot be refunded; the balance will be applied to your next trip.

Food

Groups may bring sack lunches and eat in the Museum's atrium. We will provide trash cans but cannot provide tables or chairs. Please notify us if you plan to eat on site. Quick service restaurants are available within walking distance.

Museum Shop

The Museum Shop has a variety of special items just for children. Please schedule additional time to shop after the tour; only one class is permitted in the shop at a time.

Accessibility

The museum is wheelchair accessible and meets the Americans with Disabilities Act guidelines.

Buses and Parking

Buses and vans may unload and pick up at the corner of Greene and Lombard Streets. Parking is not available at the Museum. For information on motor coach parking, visit www.baltimore.org.

For visitors, on-street metered parking and hourly garages are available nearby.

Location

The National Museum of Dentistry is located at 31 South Greene Street (at Lombard Street) in downtown Baltimore, on the campus of the University of Maryland Baltimore.

Directions

From I-95, take I-395 (Downtown Baltimore) and exit onto Martin Luther King, Jr. Blvd., staying in the right lane. At the fourth traffic light, turn right onto Baltimore Street. Turn right at the first traffic light onto Greene Street. The museum is on the left.

General Information

Call 410/706-0600 or go to www.dentalmuseum.org.



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