FUTURE WELL™ KIDS

Abbott Fund

VIRTUAL FIELD TRIP

EMPLOYEE GUIDE

AGE RANGE

10–13

OVERVIEW

Viewers will join two student guides on a dynamic and exciting journey through Abbott and the human heart as they learn about the heart's structure and discover its extraordinary abilities and purpose. By comparing the heart to a house, they will explore the circulatory system, investigate the vital role that water plays, and learn about the role of nutritious food choices and physical activity in heart health. US Olympian Lolo Jones and Abbott professionals will accompany viewers on this fascinating excursion.

USING THIS GUIDE

This guide provides you with three optional activities to enhance the use of the Virtual Field Trip. The video can be used as a stand-alone resource; however, facilitating one or more of these flexible activities can enhance the use of the Virtual Field Trip in the classroom. The "Before the Field Trip" activity should be completed before watching, and it will provide an opportunity to engage students in the topics they will learn about during the video. The "During the Field Trip" activity consists of a graphic organiser that students can use to keep track of their learning while they are watching the Virtual Field Trip. Finally, the "After the Field Trip" activity provides students with a way to apply their learning or challenges them to think about a topic in a new way after they have viewed the video.

The three supplemental activities are intended to be completed during three separate sessions to allow enough time to complete. This will require coordinating with your host educator. You may choose to complete facilitation of one or more activities virtually, have your host educator facilitate the "During the Field Trip Activity," etc. Suggested durations have been provided, but each situation will be unique.

Discovery EDUCATION

OBJECTIVES

Students will:

- Understand the structure and function of the human heart.
- Investigate the role that the heart plays in the circulatory system.
- Explore the importance of water and signs of dehydration.
- Learn the role nutritious food choices and physical activity play in heart health.

MATERIALS

- Device with the ability to project, one per volunteer
- Device with access to the internet, one per student or group
- Pencil, one per student
- **WebQuest** student handout, one per student*
- **WebQuest** answer key, one per employee
- **Staying Heart Healthy** student handout, one per student*
- **Staying Heart Healthy** answer key, one per employee
- **Type 2 Diabetes and Heart Health** student handout, one per student*
- **Type 2 Diabetes and Heart Health** answer key, one per employee

NOTE:

- See the facilitation options throughout for tips on implementing when students are remote learning or you are facilitating remotely.

Note: *See the facilitation options throughout for tips on remote learning.*

VOLUNTEER PREP

1. Read through each activity to familiarise yourself with the content. Note that lessons are designed to last the times listed, but each situation will be unique.
2. Prepare all materials before your session. Communicate the list of materials needed by students to your host educator in advance so he/she can prepare students and make sure they each have the required handouts.
3. Note that this activity is written for facilitation by one volunteer. If more than one volunteer desire to present together, it is recommended that you speak with your host educator regarding his/her preferences and limit the number of volunteer presenters to three. It is also recommended that volunteer groups assign responsibilities and practice before their sessions.
4. If students are learning or you are facilitating remotely, coordinate with your host educator prior to your session regarding preferred e-meeting platform (i.e., Zoom, Skype, Ring Central, Google Hangout, etc.). Determine who will be responsible for setting up the meeting credentials. Also, determine whether students will be on camera, using the chat feature, muted, etc. so you are better able to plan.
    - If possible, consider planning a practice session with your host educator to work out any issues prior to your session.
5. If you are facilitating the activities in person and would like students to work in groups, coordinate with your host educator prior to your session how to best distribute and organise students into small groups.

SUGGESTIONS FOR IMPLEMENTING VIRTUAL MEETINGS:

- **Lighting:** Backlighting prevents your audience from seeing you clearly. Make sure that you have lighting in front of you to ensure that you are seen.
- **Camera Placement:** Try to make sure that your camera is placed at eye level. This helps to create eye contact and engagement with your audience. You can use books or other items to lift your computer (if using a laptop).
- **Sound:** Make sure that you do a quick sound check before beginning your session. Ensure that you can be heard and that participants will not hear an echo effect. Consider the usage of headphones equipped with a speaker.
- **Make Connections:** Remember to try to connect with your audience, which can be challenging, virtually. Connect with them using quick stories or humour. Some suggestions have been included.
- **Troubleshooting:** It is okay to make mistakes or have technology issues. If you have a technology hiccup or things don't go as planned, do your best to reconnect and move forward with your lesson. The best thing you can do is be prepared by testing your internet connection and sound and video settings prior to your session!

BEFORE THE FIELD TRIP
(30–45 MINUTES)

1. Take **1–2 minutes** to introduce yourself to the class. Explain that you are here on behalf of the Future Well Kids programme, and you are excited to help teach healthy habits that students will be able to use their entire lives.
2. Engage students in the upcoming activities by asking one or more of the following open-ended questions:
    - What do you think the word "system" means in the term *body system?*
    - Think about what your body is doing right now. What body systems is your body using?
    - What role does your heart play in these systems working properly?
    - What are some examples of healthy lifestyle habits? How do these habits benefit the body?
3. Hold up your fist. Explain that the heart is a muscle—an organ in the body's circulatory system that is about the size of a person's fist. The heart has four chambers responsible for pumping all the body's oxygen-poor blood into the lungs to pick up oxygen and then be pumped throughout the entire body.

FACILITATION OPTIONS

- If students are on video and/or able to use microphones, allow them to share their answers out loud.
- If students are not using video or microphones, encourage students to write their answers down to reference later.

4. Distribute one **WebQuest** handout to each student. Read through the instructions and each of the questions.
    - **Note:** *Students may need a refresher on the term "noncommunicable diseases." If that is the case, explain to them that an NCD is any disease that is not contagious and cannot be spread to others. The flu is an example of a contagious disease. NCDs like heart disease and type 2 diabetes are often the result of lifestyle choices like nutrition and exercise.*

FACILITATION OPTIONS

If students are learning in a remote environment, consider the following:

- Introduce the **WebQuest** handout via screen share.
- Discuss responses and conclusions as a whole group.

5. Explain that in preparation for learning the intricacies of how the human heart works and how to keep it healthy during the virtual field trip, they will be investigating several of the concepts to draw their own conclusions in the end.
6. Give students **20–25 minutes** to independently explore and answer questions.
    - **Note:** *You may choose to allow students free choice in their internet research or to provide website suggestions or useful search terms. Examples might include:*
        - https://www.who.int/en/news-room/fact-sheets/detail/noncommunicable-diseases
        - https://data.unicef.org/topic/child-health/noncommunicable-diseases/
        - https://www.euro.who.int/en/health-topics/noncommunicable-diseases
        - https://www.scoilnet.ie/go-to-post-primary/science/organisations/heart/
        - "What is the circulatory system?"
        - "How does the circulatory system work?"
        - "How can I keep my heart healthy?"
7. While students' answers and explanations of understanding will vary, some anticipated responses have been included in the **WebQuest** answer key.
8. Invite 2–3 volunteers to share their conclusions with the class.

DURING THE FIELD TRIP (45–60 MINUTES, INCLUDING THE VIDEO)

1. Remind students that diseases of the heart account for the most deaths caused by NCDs,[1] so understanding how to keep their heart healthy now and into the future is vitally important.
2. Explain that during the virtual field trip, students will be recording instances and examples of risks to their heart health and ways to support a healthy heart.
3. Distribute the **Staying Heart Healthy** handout. Read through the instructions.
4. Play the ❤ YOUR HEART Virtual Field Trip (add running time), reminding students to record their thoughts on their charts throughout.
5. After the Virtual Field Trip, have students share a few of their ideas and reflect on their key takeaways.
6. If time allows, facilitate a discussion about how many of the elements that students recorded, such as making nutritious food choices or playing a sport, might already be common practice in their lives. Think of additional simple or attainable ways to increase heart health among their classroom peers and their families.

FACILITATION OPTIONS

If students are learning in a remote environment, consider the following:

- Use screen share to play the virtual field trip.
- Have students watch asynchronously and share their thoughts using the tool of your choice (online document, photo, learning management system, etc.).
- Use live video conferencing or chat rooms to conduct a whole group discussion.

1 https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

AFTER THE FIELD TRIP (45–60 MINUTES)

1. Distribute the **Type 2 Diabetes and Heart Health** handout to each student. Read through each question.
2. Independently or in small groups, have students research the effects that type 2 diabetes has on the body. Have them use their new understanding of the heart to explain how type 2 diabetes can increase the risk of heart disease.
    - **Note:** *You may choose to allow students free choice in their internet research or to provide website suggestions or useful search terms. Examples might include:*
        - https://www.diabetes.ie/about-us/diabetes-in-ireland/
        - https://www2.hse.ie/conditions/type-2-diabetes/overview.html
        - https://irishheart.ie/heart-and-stroke-conditions-a-z/cardiovascular-disease/
        - https://assets.gov.ie/14907/9fa9221a41374006a7fc2e1d4c4706fc.pdf
3. Based on what they have learned, challenge students to record their responses to the final "Draw Conclusions" question at the end.
4. Direct students' attention to the chart on page 2 of the handout, specifically the "What's Your Analysis?" section, to facilitate a discussion in which students use their thoughts and research to propose ways to reduce the risk of developing NCDs like type 2 diabetes and heart disease.

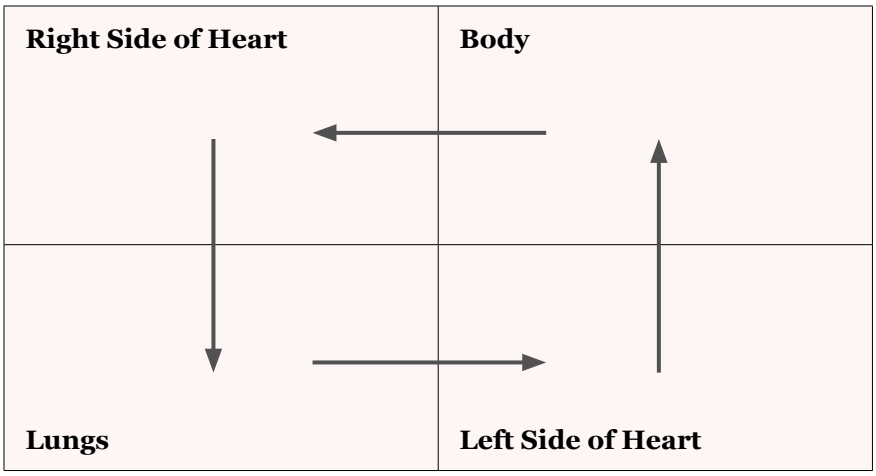
FACILITATION OPTIONS

If your students are learning in a remote environment, consider:

- Facilitating this activity as a whole group discussion via web conferencing and completing the analysis together.

EDUCATOR EXTENSIONS

- Have students model the movement of blood through the circulatory system by labelling stations around the room (Right Side of Heart, Lungs, Left Side of Heart, Body). Students can flow through the room as you narrate what happens at each station. See diagram below for an example narrative and path students would take.
    - Right Side of Heart: Oxygen-poor blood pumps from the right side of the heart into the lungs.
    - Lungs: This is the stage in which blood gains the oxygen it needs and gets rid of excess carbon dioxide.
    - Left Side of Heart: Oxygenated blood is pumped back into the body.
    - Body: Oxygen-rich blood flows through the body until it returns to the right side of the heart to repeat the process.



- Challenge students to draw conclusions on how healthy lifestyle choices can help to reduce the risk of developing NCDs like type 2 diabetes and heart disease. Instruct students to use their research to create a multimedia presentation in which they explain the importance of staying heart healthy and how positive lifestyle choices can help them reduce their risk of developing NCDs.
- Consider having students complete the two Future Well Kids self-paced modules, Exercise for Health and Nutritious Eating. Afterwards, students can apply what they learned in the module to what they learned in the Virtual Field Trip to create a personalised "Plan for Heart Health."
- Using cardboard, plywood, or other available materials, have students build a house following the "building plans" outlined in the Virtual Field Trip. They can use the model in a presentation explaining how the heart works or they can use clay, toothpicks, and index cards to post "signs" in each room explaining the role it plays. Alternatively, students can complete this on paper if 3D materials are not available.

NATIONAL CONTENT STANDARDS ALIGNMENT FOR SUPPLEMENTAL ACTIVITIES

Junior Cycle English, Statements of Learning

- SOL 1:
  The student communicates effectively using a variety of means in a range of contexts in L1.
- SOL 3:
  The student creates, appreciates and critically interprets a wide range of texts.
- SOL 6:
  The student appreciates and respects how diverse values, beliefs and traditions have contributed to the communities and culture in which she/he lives.
- SOL 16:
  The student describes, illustrates, interprets, predicts and explains patterns and relationships.
- SOL 24:
  The student uses technology and digital media tools to learn, communicate, work and think collaboratively and creatively in a responsible and ethical manner.

Junior Cycle SPHE, Aims

- To make the students aware of the elements of a balanced diet and the importance of healthy eating for physical and mental well-being.
- To develop awareness of the importance of rest and exercise for health and well-being.
- To help the students to identify possibilities for daily and weekly exercise in their own lives.

CONNECTIONS TO THE NEXT GENERATION SCIENCE STANDARDS (NGSS)

Junior Cycle Science, Statements of Learning

- SOL 13.
  The student understands the importance of food and diet in making healthy lifestyle choices.
- Students will collect and examine evidence to make judgements on how human health can be affected by inherited factors and environmental factors, including nutrition and lifestyle choices.
- Students will explore body systems and how they interact, and learn about human health. They will investigate living things and their interdependence and interactions with ecosystems.

WEBQUEST P 1/2

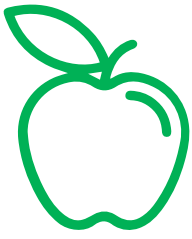
Directions:

1. Using the search engine of your choice, provide an answer for each item.
2. Respond to the "Draw Conclusions" question.

1. Define **circulatory system** in your own words:

2. Briefly explain in words or illustrations how the heart works within the circulatory system:

3. What role does nutrition play in keeping the heart healthy?



WEBQUEST P 2/2

4. What role does physical activity play in keeping the heart healthy?

5. What noncommunicable diseases (NCDs) can be avoided by making heart-healthy choices?

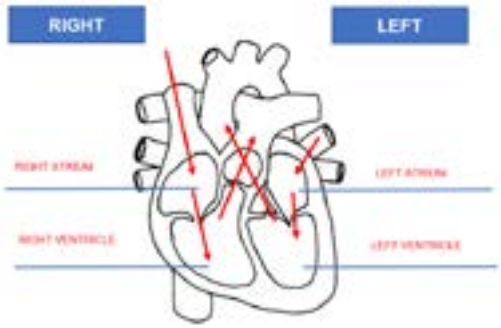
Draw conclusions. Based on your investigation, how important do you believe heart health is to reducing your risk of developing NCDs? Explain your response.

WEBQUEST P 1/2

Potential answers may include:

1. Define **circulatory system** in your own words:
   Answers will vary but should include that it is the system that transports blood throughout the body and that it includes the heart, lungs, blood, and blood vessels.

2. Briefly explain in words or illustrations how the heart works within the circulatory system:
   Answers will vary, but might look something like:



3. What role does nutrition play in keeping the heart healthy?
   Answers will vary but should include information on how a healthy diet is the best weapon against heart disease, and that they should aim to eat a balanced diet from all five food groups and less junk food.

WEBQUEST P 2/2

4. What role does physical activity play in keeping the heart healthy?
   Answers will vary but should include information like the more active or physically fit an individual is, the less likely they are to develop heart disease. Inactivity is one of the top 5 risk factors for heart disease.

5. What noncommunicable diseases (NCDs) can be avoided by making heart-healthy choices?
   Answers might vary, but will probably include diabetes, cancer, and stroke.

Draw conclusions. Based on your investigation, how important do you believe heart health is to reducing your risk of developing NCDs? Explain your response.

Answers will vary.

STAYING HEART HEALTHY

Directions: As you watch the virtual field trip, use the chart below to record instances or examples of risks to heart health and ways to support heart health.

Risks to Heart Health	Ways to Support Heart Health

STAYING HEART HEALTHY

Potential answers may include:

Risks to Heart Health	Ways to Support Heart Health

• Type 2 Diabetes
  ○ Damages blood vessels
  ○ Affects heart pumping
  ○ Slows heart rate
• Increased levels of blood glucose
• Increased blood pressure
• Too many sweet, salty, or fatty foods
• Stress
	• Staying hydrated
	• Nutritious food choices
	• Physical activity
	• Active lifestyle
	• Eating heart-healthy foods
	• Getting the right vitamins, minerals, and nutrients
	• Getting enough sleep

TYPE 2 DIABETES AND HEART HEALTH P 1/2

Directions:

1. Using the search engine of your choice, provide an answer for each item.
2. Respond to the "Draw Conclusions" question.

1. Define **type 2 diabetes** in your own words:

2. What effects does type 2 diabetes have on the body?

3. What effects does type 2 diabetes have on the heart?

4. Based on what you learned watching the Virtual Field Trip, how do you think having type 2 diabetes could contribute to having heart disease?

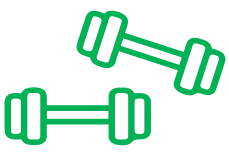
Draw conclusions: How can making healthy lifestyle choices, like getting enough physical activity and making the most nutritious food choices, possibly decrease your risk of developing NCDs like heart disease and type 2 diabetes?

TYPE 2 DIABETES AND HEART HEALTH P 2/2

5. Use the chart below to organise your research and learning from the Virtual Field Trip:

How does a person keep their heart healthy?	
What are things that can put heart health at risk?	
How does a healthy heart reduce a person's risk of NCDs?	
What connection is there between type 2 diabetes and heart health?	

What's Your Analysis? Based on your research and what you learned during the Virtual Field Trip, what recommendations would you make to your friends and family to help them stay heart healthy?



TYPE 2 DIABETES AND HEART HEALTH P 1/2

Potential answers may include:

1. Define **type 2 diabetes** in your own words:
   Answers will vary but should include that the disease impairs the body's ability to regulate glucose.

2. What effects does type 2 diabetes have on the body?
   Answers will vary, but students will probably include symptoms (i.e., thirst, frequent urination, hunger, fatigue, etc.) or common comorbid conditions (i.e., heart disease, stroke, high blood pressure, etc.).

3. What effects does type 2 diabetes have on the heart?
   Answers will vary but might include that people with type 2 diabetes often have conditions that raise the risk for heart disease such as high blood pressure and increased "bad" cholesterol.

4. Based on what you learned watching the Virtual Field Trip, how do you think having type 2 diabetes could contribute to having heart disease?
   Answers will vary but should include that high blood sugar can damage blood vessels and the nerves that control the heart or that high blood pressure can force blood through arteries and damage artery walls.

Draw conclusions: How can making healthy lifestyle choices, like getting enough physical activity and making the most nutritious food choices, possibly decrease your risk of developing NCDs like heart disease and type 2 diabetes?
Answers will vary but should reflect information presented in the Virtual Field Trip

TYPE 2 DIABETES AND HEART HEALTH P 2/2

5. Use the chart below to organise your research and learning from the Virtual Field Trip:

How does a person keep their heart healthy?	Students should record the information from column two of their **Staying Heart Healthy** handout and information on nutrition and physical activity they found during their **WebQuest** research.
What are things that can put heart health at risk?	Students should record the information from column one of their **Staying Heart Healthy** handout.
How does a healthy heart reduce a person's risk of NCDs?	Students should record the information on NCDs they found during their **WebQuest** research.
What connection is there between type 2 diabetes and heart health?	Students should record the information on type 2 diabetes from the first page of this handout.

What's Your Analysis? Based on your research and what you learned during the Virtual Field Trip, what recommendations would you make to your friends and family to help them stay heart healthy?

Answers will vary but should reflect an understanding of the content