Discovering the Body with Google Tours

Year level: 5-8

image: screen capture of Google Expeditions

Summary

In this lesson, students explore the Respiratory System using Google Tours. The teacher can guide the students through a tour together or the teacher can allow students to freely navigate and explore the system on their own or in small groups.

After experiencing the Virtual Tour, students then go on to remix the project by extending it to include additional content about the Human "mammal" Respiratory System and by also comparing it to another class of animal. For example, students could choose to compare the human respiratory system with that of fish, amphibians, birds or vertebrates.

Required Resources

1. Tablet devices or phones with Google Expeditions installed (see https://support.google.com/edu/expeditions/answer/7271183).
   Note this is available on iOS or Android. If you do not have enough devices, students can work in pairs or take turns in small groups. If you have neither Tablet or Phones available, students can go straight into viewing and creating a Virtual Tour on a Desktop.
2. This Tour Creator resource is helpful to review before implementing the lesson:
   https://support.google.com/tourcreator/faq/9009839?hl=en

Suggested steps

The following are some suggested steps for implementing the lesson.

1. **Explore and Learn**: Start by allowing students to experience the Google Tour of the Respiratory System.
   a. Using their handout template (Appendix 1), students label their diagram, identifying key parts of the human respiratory system as they learn about them using the Tour.
2. **Research:** In groups or individually, students select and research another class of animal to compare respiratory systems (e.g. fish, amphibians, birds or vertebrates).
   a. Students start by researching their new class of animal as well as by finding additional information about the human respiratory system. Resources should be from credible sources that are accurate, reliable and current.
3. **Design:** Before creating their project, students design on paper or in a Word document, the "scenes" and the key information points that will go into each scene. They can choose to keep the current scenes or edit them as needed.
   a. The image below shows the Google "Human Anatomy - Respiratory System" project, with the scenes along the bottom set as "Lungs - the Centre of the Respiratory System", "The Respiratory System", "Air Exchange", "The Trachea" and "Inside the Lungs".

4. **Implement:** Students remix and build their VR project using **Google Tour Creator**.

   a. Students start by logging into Google Tours. To remix the Google Human Anatomy Project on Human Respiratory System, they click on "Templates" in the top left (see image below). Students search for Human Anatomy - Human Respiratory System" created by Google and select the project.

5. **Review:** Students swap and review their projects with a critical peer. Students provide each other feedback using a rubric or project criteria sheet.
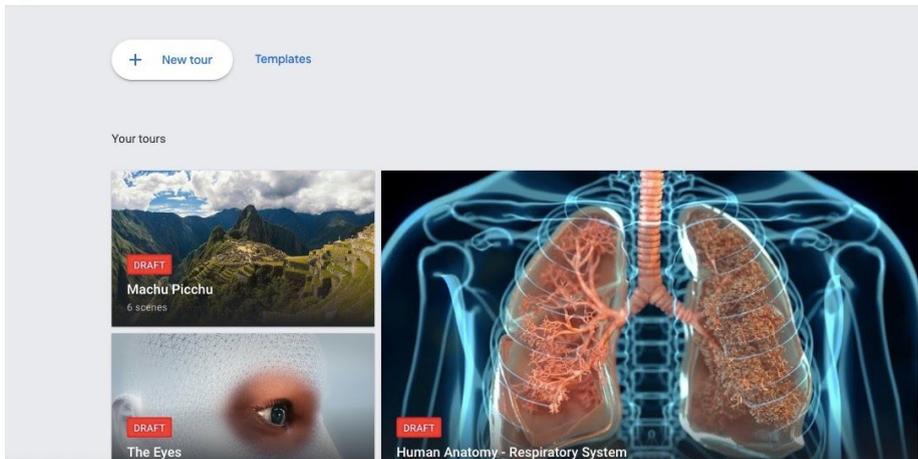
a. This project will be saved to the students' project page. Students can now click on the "events" at the bottom of the screen and edit the pages. This brings up the ability to edit content. Students can click on current "points of interest" and edit or delete the content. Students can also "Add point of interest" to create new information points. Students can choose to add images, sight recordings or text for viewers to learn about their project topic.

b. Using the "points of interest", students create new content that compares human anatomy and functions to that of their selected animal class. Students can choose to add text, record audio information and/or include new images of animal anatomy.

c. The bottom left-hand side has the option for students to "Set starting view". This is the placement of the view that Expedition users will first encounter.
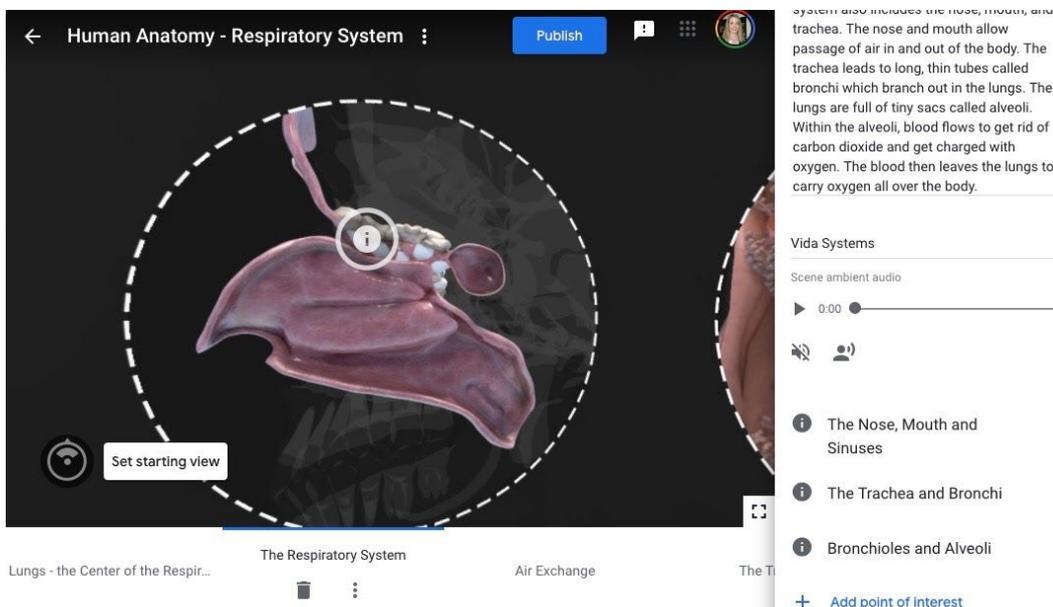
6. **Publish and view:** Once students have completed their project they are able to "Publish" their project by clicking in the top right-hand corner. Students can select to share publicly (appearing on the Google Poly list) or as an unlisted project. You can publish your tour to Poly to be viewed by anyone on the web, whether on desktop or on a mobile device, or in VR using Cardboard (available for Android and iOS). Look for the VR icon on mobile to view your tour in VR. Or, you can keep your tour unlisted and share the URL with anyone. Unlisted tours can only be seen by those with the direct link and won't appear in the search results. Public tours are visible to all users and they'll be easily shareable and viewable. We recommend publishing as 'unlisted' and for students to share with a link.

Discussion

The following are some suggested discussion points throughout:

- What are the key organ systems in the human body? What functions do they have to support life processes in humans?
- What are other classes of animals? What are some of the key differences people have discovered about their respiratory system and the human respiratory system?
- How does the App present the information to the user? What are the strengths and weaknesses? How does the user interact with the App?

Why is this relevant?

Digital Technologies content: Students experience Augmented Reality (AR) and Virtual Reality (VR) designed for a particular educational purpose - to learn about human anatomy. In this project, students design and implement a virtual reality experience using tools available. In doing so, students are considering how they can design for the user and user-interaction and different ways of presenting information using tools for a particular purpose. Students will evaluate another project, engaging them in thinking critically about the user's experience and presentation of information.

Science content: We classify living things based on features and similarities using hierarchical systems, such as kingdom, phylum, class, order, family, genus and species. There are different animal classes including vertebrates (animals with backbones), mammals, birds, fish, reptiles, amphibians. They are all part of the phylum chordata.

Assessment

In this lesson students will demonstrate the following learning:

- ability to compare similar systems in different organisms such as digestive systems in herbivores and carnivores, respiratory systems in fish and mammals

● ability to design their own virtual reality solution and the user experience of a digital system, plan and manage projects and evaluate another solution.

Indicators	Yes/No/Partially	Comments
Students identify humans as being within the mammal class and select and correctly identify one other animal and its class for comparison.		
Students make comparisons between humans and their chosen class, drawing on information about the Respiratory System.		
Students present a proposed design plan for their project, highlighting the user experience with 'points of interest' and use of media types.		
Students effectively plan and manage projects that create and communicate ideas and information.		
Students use reliable, accurate resources to support their virtual reality project.		
Students critically evaluate another project, describing how the solution meet needs the needs and goals of communicating information to a user.		

Curriculum links

Links with the Digital Technologies curriculum area

Year band	Strand	Content description
Years 7-8	**Processes and Production Skills**	Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028)
Years 7-8	**Processes and Production Skills**	Plan and manage projects that create and communicate ideas and information collaboratively online, taking

		safety and social contexts into account (ACTDIP032)
Years 7-8	**Processes and Production Skills**	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability (ACTDIP031)

ADD Links with other curriculum areas

Year band	Learning area	Content description
Year 7	**Science - Science and Understanding - Biological Processes**	Classification helps organise the diverse group of organisms (ACSSU111)
Year 8	**Science - Science and Understanding - Biological Processes**	Multi-cellular organisms contain systems of organs that carry out specialised functions that enable them to survive and reproduce (ACSSU150)
Year 7-9	**Science - Science Inquiry Skills**	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (ACSIS133, ACSIS148).

ADDITIONAL SUPPORTING RESOURCES

- You might like to download and use Curiscope's full lesson plan kit to use with primary and middle years (some lessons could be adapted for older years). https://www.curiscope.com/pages/science-lesson-plans-human-body
- Other Expeditions that could be explored and remixed:
  - Human Anatomy - Circulatory System https://poly.google.com/view/6rEtD3xvIUB
  - Human Anatomy - Human Nervous System https://poly.google.com/view/dBzk5erdQcg
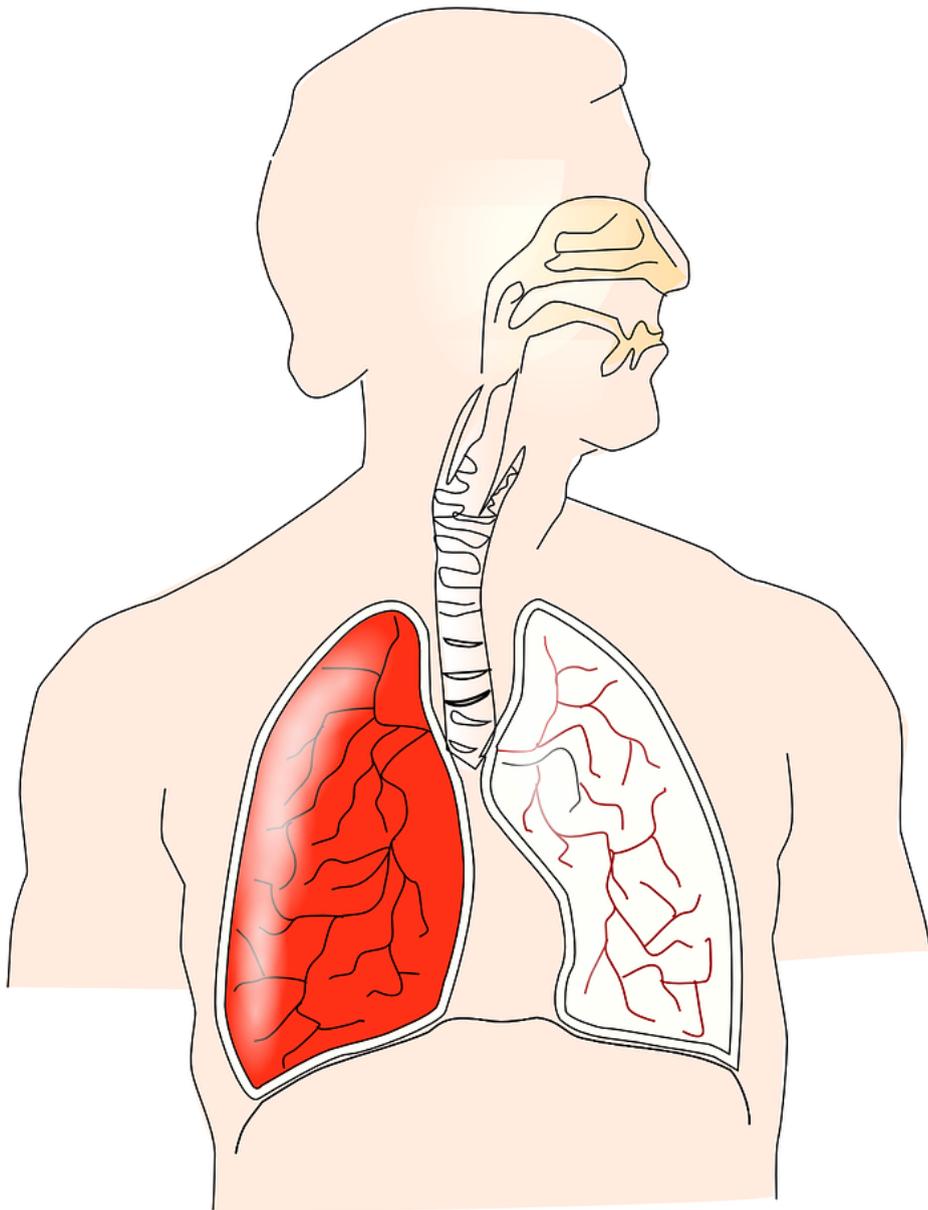 - Anatomy - Muscular System https://poly.google.com/view/bd_3zFTBAUV

TEMPLATE 1

image: Pixabay, Clker-Free-Vector-Images / 29588 images
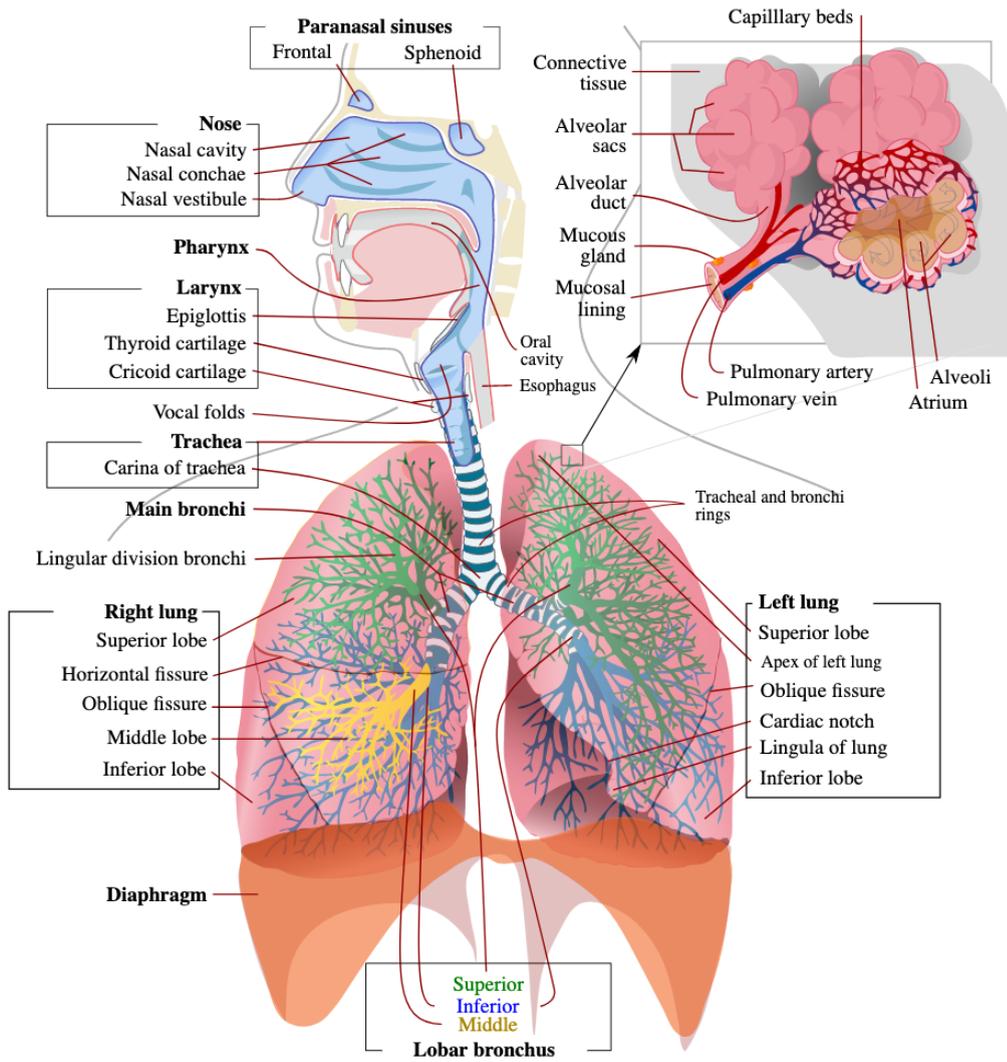
image: https://en.wikipedia.org/wiki/File:Respiratory_system_complete_en.svg