

# Human Breast 3D

*Teaching the Human Breast and Anatomy through 3D simulation*

## Lesson

Teaching the Human Breast and Anatomy through 3D simulation

## Objectives

- 1) Students will gain a basic understanding of the Human Breast through 3D simulation and visualization
- 2) Students will gain a deeper understanding of the components of the Human Breast and its function

## Activity

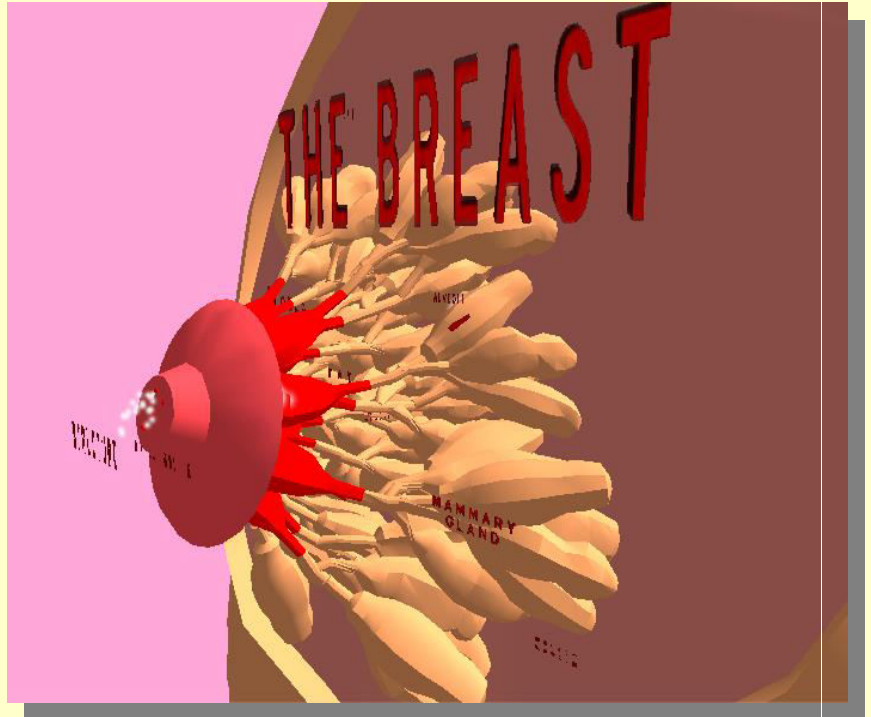
Students travel through the Human Breast in real-time 3D, helping them to visualize and understand its structure and function

## Materials

### Human Breast3D Homepage

(click or cut and paste URL into browser)

<http://www.sunrisevr.com/thebreast3d>



## 3D Simulation and Investigation

*3D simulations are designed to make subject matter more engaging to today's technology-savvy kids, and help them bridge the gap between the "concrete" world and the abstract world of concepts. When students experience complex subject matter in real-time 3D it becomes clearer. Students learn best when they are actively immersed in subject matter from a variety of different viewpoints; 3D simulation is designed to help students visualize difficult ideas and objects through investigation at any scale (atomic, cellular, planetary, conceptual, etc), and doing things that would normally be impossible.*

## Required Technology

- Unity3D/Flash-Enabled Computer
- Internet Access

## Optional Technology

- Projector
- Multiple Computers

## Grouping

- Large Group Instruction
- Small Group Instruction
- Individualized Instruction

## Staging

Check computer for Internet access, Unity3D/Flash, and projection if needed

## Procedure

1. Access program
2. Pick a lead student navigator to control movement through the 3D environment
3. Pick a lead student reader to read information about the Human Breast as it appears on-screen
4. Begin the lesson by asking students what they already know about the Human Breast, write responses on the board
5. Review basic facts about the Human Breast including:
  - The primary function of the Human Breast is to produce milk for newborns through a function called lactation
  - The breasts are located above the pectoralis muscles in the chest area
6. Start traveling through the program, facilitate discussion by asking students where the class should go
7. Use the 3D simulation as a visual aid; explain information as needed
8. Have students pay special attention to:
  - The Human Breast contains milk glands connected to milk ducts inside the nipple all held together with fatty and connective tissue
  - The mammary gland is the organ within the Breast that produces milk
9. Have a final wrap-up with students with a question and answer period about the Human Breast. Ask them how it works, the main components of the Human Breast, and why it is important.

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### Optional Activity: 3D Scavenger Hunt + Discussion

Have students find a particular part of the Human Breast, such as a milk duct. If students are on multiple computers, have them “race” to the part of the Human Breast the teacher wishes to highlight. Once students find/arrive at the location, the teacher may commence discussion. Repeat in other areas of the simulation as desired to build understanding.

### Homework/Review

Students may also access the program outside the classroom to supplement textbook questions

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### Functional Notes

- The program is available on multiple platforms
- If using the program online, please ensure the Unity3D Player is installed on the computer; through the Internet Explorer Browser; download the latest at <https://unity3d.com/webplayer>.
- If you see something in **red** you can probably click on it
- For ease of use you can go through most 3D objects, and even the ground
- The school library can request and access programs (free) at [www.sunrisevr.com](http://www.sunrisevr.com) for off-line use via PC and Mac if there is no internet connection