Charades Activity to be used with the Stem Cell Module

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How To Play

To start, divide into two teams with 3-5 people on each team. Shuffle the deck of cards, then place the deck of cards face down on the table. The team with the player who has the closest birthday starts first. The starting team then elects one person from the team to go first and a player from the other team sets up a stopwatch for one minute. Once the player elected to go first flips over the first card to read, the timer starts. The player then has one minute to get their team to guess as many cards as they can in the pile, before the timer runs out! Once the timer runs out, the player then returns to their team with the correctly guessed cards and the next team elects a player to go.

There are two rounds to this game of charades! For the first round, when the elected player is in front of their group reading the cards, they are NOT allowed to say the name on the card. However, they can say anything else to try and get their team to guess what's on the card, including the description of the word on the card. For the second round, the elected player is not allowed to say anything, they must either act or draw out a description of the word on the card, to get their teammates to guess the name on the card.

Note: For the words that include "stem cell" in the name, it is permissible for the player to say "stem cell" in their description. If the team is unable to guess the card, the player can return the card to the bottom of the deck and start trying to get their team to guess the next card. Once the entire deck of cards has been guessed, the teams calculate their total points (one point per card) to see who won!

Materials Needed

For the game, the "Stem Cell Cards" document needs to be downloaded, then printed. After printing the document, the cards need to be cut and folded, then taped together. A stopwatch will additionally be needed for this game, to keep track of time. For the second round of the game, if students only wish to draw, as opposed to act, a piece of paper and a pen will be needed.

@ Carnegie Mellon, Isabel Joyce, and Cassandra Dodson. Note: This educational resource was developed by Isabel Joyce, MS Biomedical Engineering, 2022, and Cassandra Dodson, MS Biomedical Engineering, 2022, for the course *Directed Study* during the Spring of 2022, taught by Dr. Conrad Zapanta and co-advised by Dr. Judith Hallinen. Some information is from Dr. Rachelle Palchesko, from the course *Stem Cell Engineering* at Carnegie Mellon. Citations links active as of May 2022.

Words and Definitions

Word	Description
nucleus	Organelle in the cell that stores the genetic information.
membrane	Construct that separates the inside of the cell from the outside environment. This controls material transfer in and out of the cell.
organelles	Specialized subunit within the cell that has a specific function. Examples include the nucleus, mitochondria, and endoplasmic reticulum.
cytoplasm	The material inside the cell, that holds the organelles.
DNA	Genetic information stored in the nucleus of the cell.
cell	Smallest unit of life in the body.
tissue	Comprised of many cells, to form a unit.
organ	Comprised of many tissues, to form a functional unit.
organism	Comprised of many organs, to form a human!
differentiation	The ability of the stem cell to develop into many different types of cells in the body.
self-renewal	The ability of the stem cell to regenerate many times. This contributes to the stock of stem cells in the body.
fibrosis	The formation of clots, to stop excessive bleeding. Also recognized as scarring.
inflammation	When immune cells go towards the site of injury to fight infection and get rid of debris.
proliferation	When new cells are formed and move to the site of healing.
remodeling	When new tissue continues to mature and increase in strength.
embryonic stem cells	Found in the blastocyst early in human development, these cells are pluripotent and easy to locate. There are some ethical concerns with their usage.
adult stem cells	Found in different niches throughout the body, these cells are multipotent and difficult to locate.
neural stem cell	Type of adult stem cell that differentiates into cell types found in the brain.
epithelial stem cell	Type of adult stem cell that differentiates into cell types found in the skin and vascular lining.

mesenchymal stem cell	Type of adult stem cell that differentiates into cell types found in your muscle and fat.
hematopoietic stem cell	Type of adult stem cell that differentiates into cell types found in the blood.
induced pluripotent stem cell	Stem cell type that is reprogrammed from somatic cells to increase their potency.
stem cell therapies	Treatment options for various diseases, with the use of stem cells.
stem cell niche	The microenvironment in which adult stem cells are found in the body.