Name: _____ Class: _____

Advancements in Hockey

GRADES 6-8

Elaborate

Select your stance regarding instant replay: ☐ ***For*** or ☐ ***Against***
Brainstorm: What problems do increased use of instant replay in hockey solve?

answer here

OR

What problems do increased use of instant replay in hockey cause?

answer here

Criteria for Improvements/Changes of Instant Replay	Constraints for Improvements/Changes of Instant Replay
answer here	answer here

Name: _____ Class: _____

Advancements in Hockey

GRADES 6-8

Evaluate

Letter to the Commissioner's Office of the NHL (National Hockey League):

- Does science and technology (instant replay) make hockey more fair?

  answer here

- Would an increased use of instant replay enhance or detract from the game?

  answer here

- How can instant replay be improved to meet the needs of all stakeholders: referees, game officials, players, coaches, and fans?

  answer here

  Write letter here

GRADES
6-8

Capstone

Exploring the different classifications of disabilities in the Paralympics.

Objective
Students will explore the different disabilities in the Paralympics. Students will participate in activities that simulate these disabilities. Students will research a Paralympic sport and discuss the STEM concepts that make each sport accessible.

Sub-Objective
Students will define criteria and constraints of an identified problem. Students will test a solution to the problem and analyze the data for improvements. Students will evaluate two solutions to a problem and use evidence to determine if they meet the criteria and constraints of the problem.

Standards

Next Generation Science Standards Connections

MS-LS3-1: Heredity: Inheritance and Variation of Traits. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

National Standards for K-12 Physical Education Connections

Standard 4: The physically literate individual exhibits responsible personal and social behavior that respects self and others

Supplies Provided
Masking Tape, Tape Measures, and Floor Hockey Pucks

Materials Needed
Pencils, Colored Pencils and/or Markers, Poster Paper, Paper, and Internet Access

Sequence of Lesson

Engage: Ask your students to partner up and make a list of all of the Olympic sports that come to mind. Then ask students to elaborate on their lists by adding the Olympic athletes (past or present) in those sports.

Explore: Have students participate in some of the following activities:

- Tape a piece of paper on the wall with a goal drawn in the center. Ask students to close their eyes, spin in a circle as quickly as they can 10 times – still keeping their eyes closed – and attempt to place a mark that would be a goal.

- With a partner, have students stand about 3 meters apart, with each holding one hand behind their back the entire time, toss the floor hockey puck back and forth. If they are successful, take a step back and repeat the process until there are no teams left. Then have students repeat this process, but this time using both hands yet only standing on one foot.
- Use masking tape to mark a line on the ground. Ask students to close their eyes and spin in a circle as quickly as they can 10 times and then attempt to walk as far as they can without stepping off the line.
- With a partner, have students stand about 5 meters apart. Have each student cover/close one eye to affect their depth perception. Attempt to throw and catch the puck as many consecutive times as possible.
- Ask students to partner up: One partner will tape a piece of paper to the back of their partner and begin drawing a simple picture. The second partner will try and replicate this picture on a separate sheet of paper.

Explain: Explain to students there are four different types of Olympics: Summer, Winter, Youth, and Para. The first three are made up of participants who are best at their sport. However, the Paralymics has participants who are best at their sport, yet have to qualify by overcoming one or more of the following disabilities: Amputee, Cerebral Palsy, Intellectual, Vision, or other.

Elaborate: Ask students to reflect on the difficulty of the activities from *Explore*. Each activity is designed to simulate at the most basic level the difficulty of having that impairment and completing every day tasks. The activities where you close one or both eyes simulates having a vision impairment; the arm and leg restriction activities simulate having an amputee limb; the balance activities simulate having Cerebral Palsy, affecting a person's ability to move or maintain balance; the drawing activity simulates an intellectual disability, where communication is often difficult. Notice some activities even simulate having multiple disabilities.

Evaluate: Ask students to research one of the following Paralympic Sports and prepare a presentation.

Alpine Skiing Archery
Badminton
Blind Football Boccia
Canoe
Cross Country Skiing
Cycling
Equestrian
Goalball
Judo
Para Ice Hockey
Powerlifting
Rowing
Sitting Volleyball
Snowboarding
Swimming
Table Tennis
Taekwondo
Wheelchair Basketball
Wheelchair Curling
Wheelchair Fencing
Wheelchair Rugby
Wheelchair Tennis

Have students answer the following questions based on their research:

- What is the sport?
  answer here
- How does the paralympic sport compare?
  answer here
- Who can participate?
  Some sports restrict the type of disability you must have in order to participate.
  answer here
- What technological advancements (glasses, implants etc.) are used to make this game accessible?
  answer here
- What type of engineering advancements (wheelchair, prosthetics, guide sticks, etc.) are used to make this game accessible?
  answer here
- What type of scientific advancements (medicine, surgery, etc.) are used to make this game accessible?
  answer here

Ask students to present their projects. This can be done using a gallery walk, in small groups, or even large group presentations.

Extend: Have students form groups based on similarities of the type of engineering advancements during their presentations. Have students sketch their own design of their advancements as a group.