The Bruins I.C.E. School

Lesson 1: Physical Benefits of Ice Hockey
Lesson 2: Protecting Bones
Lesson 3: Changing Equipment
Lesson 4: Playing in the System
Lesson 5: GOAL!

Worksheets Included:
Please see each lesson for frameworks applied to that lesson
Lesson 1: Physical Benefits of Ice Hockey

Concept/Topic to Teach: The Human Body

Standards Addressed:
7.14.b. Identify the parts of the human body and demonstrate understanding of how the parts work together to perform functions that satisfy common needs

General Goal(s) – Expected Outcome: During this lesson, students will explore the physical benefits (muscular and cardiovascular) of ice-skating as a recreational activity. Students will be able to identify targeted muscle areas (quadriceps, hamstrings, abdominal and back muscles) on the human body. Students will be able to identify specific exercises that will benefit ice skaters.

Specific Objectives:
1. Identify and locate quadriceps, hamstrings, abdominal and back muscles.
2. Teach classmates specific exercises that benefit targeted muscle areas.
3. Students will understand that ice-skating benefits the cardiovascular system by increasing heart rate and blood flow.
4. Students will create model of targeted muscles.

Technology Integration:
Possible Websites:
www.skatingfitness.com/IceSkating
www.livestrong.com/article/7906-stretch-primary-muscles-used-skating/
http://www.sport-fitness-advisor.com/ice-hockey-training.html

Required Materials:
• Chart Paper
• Blank Human Body Worksheets for each student (muscular system)
• Art supplies for model creation
• Resources to conduct research: ex. Books, Websites (see Technology Integration)
• Gym floor or area that allows for sliding
• Socks
• Clipboard and Pencils

Introduction: Ask students what they think are the physical benefits of playing ice hockey. Solicit responses and write answers on chart paper. Show the students the Specific Objectives for this activity.
Modeling/Explanation:
1. After compiling the list of potential physical benefits of playing hockey, let students know that they will be watching a video of the Boston Bruins. Have them watch with an “eye” on what areas of the body are working the hardest.
3. After watching the video, go back to the chart paper created during the Introduction section of lesson plan, and add any other additional comments to the chart.
4. After completing the Introduction and Modeling/Explanation sections of the lesson plan, bring students to the gym. Each student should bring a clipboard with a blank human body worksheet and pencil with them. Have each student take off their shoes and only wear socks. Have the students scatter on the floor. Model the action of sliding side to side to imitate an ice skater. Ask students to do the same. As the students are sliding, ask them to mark the areas on the body that they “feel” their muscles working.
5. After about 10 minutes, ask the students to return to the classroom. While in the classroom, provide computer access (or go to a computer lab if appropriate). Visit one of the recommended websites (Technology Integration section) and have students research the answer to “What muscles are primarily used while ice skating?”
6. After the students have had time with the resources, introduce them to the following vocabulary words and show them where they are located on the body. Vocabulary Words: Muscles, Hamstrings, Quadriceps, Abdominal, Pectorals, Triceps and Biceps.
7. Have students write the answer to this question on a piece of paper.

Independent Practice:
Students (individually or in pairs) will create a model of a hockey player and highlight major muscle areas.

Differentiated Instruction:
Adaptations (For Students with Learning Disabilities):
1. Allow students to use scribe if needed for any activity that requires writing.
2. If a student is unable to slide during the gym period of this lesson, allow them to move however they would like, getting as close to sliding as possible.

Extensions (For Gifted Students)
Have students research exercises and stretches that benefit hockey players. After research is complete students can “teach” their classmates or make a video presentation.

Check for Understanding: After the lesson is completed, provide students with a blank human body. Ask them to fill in the areas of the body that are used. You may want to see if they can name the actual muscle from a list provided, although if this is used as an introductory level lesson, you may need to spend more time on vocabulary identification.

Closure/Wrap-Up: Have students share their models.
Evaluation: The teacher can evaluate human body worksheets that are completed and make evaluations based on student created models.
Lesson 2: Protecting Bones and Muscles

Concept/Topic to Teach: The Human Body

Standards Addressed:
7.14.b. Identify the parts of the human body, and demonstrate understanding of how the parts work together to perform functions that satisfy common needs.

General Goal(s) – Expected Outcome: During this lesson students will learn skeletal and muscular areas within the body that are protected by hockey equipment.

Specific Objectives:
1. Students will identify specific areas of the body that are protected by hockey equipment.
2. Students will create a visual model of hockey equipment and identify the parts of the body that the equipment is meant to protect.
3. 

Technology Integration:
Possible Websites: http://www.hughston.com/hha/a.hocksafe.htm

Required Materials:
- Set of hockey equipment- Helmet and face mask, shoulder pads, gloves and elbow pads, hockey pants, skates, leg guards, mouth guard, jock strap and cup, and a hockey stick
- Computers or hockey books for research
- Various recycled materials for model building- yogurt containers, boxes, paper, straws, etc.
- Index cards

Introduction: As many of your students may already know, hockey can be a violent sport. In a game that involves checking and crashing into the boards, as well as possibly being hit by a puck that is traveling at high speeds, it is important to protect yourself at all cost. After this lesson, students will understand what equipment hockey players use and what that equipment is meant to protect.

Modeling/Explanation:
2. As the students are watching the video, have them observe what types of equipment they see being used.
3. After the video is complete, ask them to name as many pieces of equipment as they can (write on note paper or chart paper).
4. Ask the students what the equipment that they have named is intended to protect (at this point do not give specific names for body parts if this is an introductory lesson).

5. Let the students either have computers or books to look up “hockey equipment” (you can group children up if resources are scarce).

6. Ask the students to write down all the equipment that they find and to name the part of the body that the equipment is intended to protect.

7. Bring out the hockey equipment that you have in class. If the equipment will fit a student in your class, have them come up to be “dressed”. If your gear will only fit an adult, you can put it on or have a parent volunteer in for this.

8. As you “dress” a student, yourself or someone else, ask the students to name the equipment (if they can through their research) and name the part of the body that the equipment is meant to protect.

9. Now tell the students that it is their turn to build a hockey player. Put a pile of recycled material out in the middle of the floor.

10. Group children and instruct them to build a hockey player using the recycled materials. Stress that each player must have the required safety equipment. Encourage children to be creative with the materials that are provided.

11. Have children label parts of the body that each piece of equipment protects with an index card. If the model is not big enough to use index cards, masking tape may work.

**Independent Practice:**
- Using labeled index cards (one side says the equipment the other says the body part it protects), have students place the cards by hockey equipment that is laid out on the floor.
- With same index cards, students can play “around the world”.

**Differentiated Instruction:**

- **Adaptations (For Students with Learning Disabilities):**
  Allow students to have teacher aid or other student to read resource material to them.

- **Extensions (For Gifted Students):**
  Have the students write a persuasive essay as to why hockey players should use the required equipment. Have the students’ name what the pieces of equipment protect and why those areas of the body are important to the overall function. After, students can read their essays to young hockey players, or to another class lower than third grade.

**Check for Understanding:** Observe students as they work and ask questions as appropriate.

**Closure/Wrap-Up:** Have students share their models. Allow students to play “around the world” or label equipment throughout the weeks.

**Evaluation:** Create an equipment list and body parts matching sheet. Have students match the equipment to the body part.
Lesson 3: Changing Equipment

Concept/Topic to Teach: Outputs and Impacts

Standards Addressed:
7.18 Students understand that people control the outputs and impacts of our expanding technological activities in the areas of communication, construction, manufacturing, power and transportation, energy sources, health technology, and biotechnology.

General Goal(s) – Expected Outcome: During this lesson students will explore the evolution of hockey equipment through history. They will infer and research why the technology of the equipment changed over time and make connections to how these changes have made the game safer for everyone who plays.

** Before conducting this lesson, the teacher should do their own research on the history of hockey equipment. There are numerous websites out there. Most sites indicate that equipment was first used in the early 1900’s.

Specific Objectives:
1. Students will research how hockey equipment has changed over time.
2. Students will make a timeline of hockey equipment.
3. Students will select one or two pieces of equipment and describe how it has changed over time.

Technology Integration:
Possible Websites:
http://stars.nhl.com/ext/pdf/NHL_UniformBooklet.pdf (great site for equipment timeline up to 2007)
http://www.cahahockey.com/Page.asp?n=21718&org=cahahockey.com (good site for mouth guard discussion)
*If available, students may create a slideshow or PowerPoint presentation for their timeline.

Required Materials:
- Computers for internet research
- Boston Bruins 2010-2011 Guide and Record Book
- Paper to create timeline on.
- Any hockey equipment. It would be ideal to have equipment that is outdated along with equipment that has been made over the last 5 years.
Introduction: The idea of change over time is a standard that is learned throughout sciences. Many things influence change. In nature, weather influences change. Our earth and universe are always in a constant state of change. People have influenced change in our world through the creation/invention of different types of transportation, building construction and much more. Why do people change things? Today we will look at ways that people have changed hockey equipment over time.

Modeling/Explanation:
1. Before the lesson begins, ask students to think about how the toys and tools that they use have changed as they have gotten older. Ask them to think about why these things have changed.
2. Solicit some ideas as to why things have changed in their lifetime.
3. Now focus the students’ attention on hockey equipment. Lay the equipment that you do have on the floor in front of the class or on a table if that makes it easier to see.
4. Ask the students to think about how the equipment has changed and then ask for suggestions as to why it may have changed.
5. Give the students a chance to flip through Boston Bruins 2010-2011 Guide and Record Book (you may want to copy some pages for multiple groups to view) with a focus on equipment that they see throughout the book. The regular season section and history section are really good for this.
6. Introduce a timeline to the students if they are unfamiliar with it.
7. Begin a timeline with the students starting in 1900’s.
8. Guide students to useful websites (see technology integration) for timeline help.
9. Assign students one or two pieces of equipment and have them research the evolution of this equipment. Be sure to include mouth guards, as they are now a major focus in youth hockey.
10. Students should write about when the equipment was first introduced to hockey, what it protects and how it has evolved if possible.

Independent Practice:
Students will answer the following prompt: Why has hockey equipment continued to evolve?

Differentiated Instruction:
Adaptations (For Students with Learning Disabilities):
• Students can access all accommodations as stated in their IEP.
• Students can work in small groups while researching assigned equipment.
• The teacher can adjust all areas as needed.

Extensions (For Gifted Students)
• Students can contact local hockey stores and ask to visit to see all the different types of equipment available.
• Students may also research goalie equipment as that has changed over time as well.

Science 3rd Grade
• Have students develop the next piece of equipment that will either come out, or that will be improved.

Check for Understanding:
• As students are working, circulate making sure that students are successful in Internet searches.
• As students are working, keep reminding them that equipment has changed for reasons and to focus on those reasons as they research their own piece of equipment.

Closure/Wrap-Up:
Display student (or group) reports.
Allow students to explore more equipment changes in hockey or other sports during independent times.

Evaluation:
The teacher will observe for understanding throughout the lesson taking notes. Use the writing prompt as an assessment piece.
Concept/Topic to Teach: Interdependence

Standards Addressed:
7.13.c. Describe and show examples of the interdependence of all systems that support life (e.g., family, community, food chains, populations, life cycles, effects on the environment), and apply them to local systems.

General Goal(s) – Expected Outcome: Students will better understand the idea of interdependence. They will further their understanding of systems and how they work and how each part of the system relies on one another in order to survive.

Specific Objectives:
- Students will learn the positions on the hockey team and learn what each position is required to do.
- Students will learn how a hockey team strives to be a working system, where all parts share interdependence to one another.

Technology Integration:
Possible Websites:
www.dunedinicehockey.co.nz/tips/positions/ (good site that explains each position and what the role of each player is)
http://www.youthhockeyinfo.com/blog/63/hockey-positions-hockey-defense (another good site that explains positions and roles)
There are also many YouTube sites that show videos that may be useful.

Required Materials:
- Blank hockey rink paper (with all markings for a hockey game)
- Computers for research
- Floor hockey equipment and gym (if you do not have a gym, use an open space. Be sure to mark a center line and goal areas)
- 12 index cards: 2 labeled center, 2 labeled left wing, 2 labeled right wing, 4 labeled defense and 2 labeled goalie.

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Introduction: Did you know that a hockey team is a system? Systems make up our world. There are many systems around us right now. Can you name any? In nature we have ecosystems. Our body is made up of many systems. In order for any system to work there are parts that rely on one another in order to survive.
For example, if our body did not have a skeletal system, then we would not be able to be upright. If we were not upright we would not be able to walk. If we couldn’t walk we would not be able to move as quickly as we do. As you can see, if one part of the system fails, other parts will as well. Today we will look at a hockey team and find out the parts to it. Yes, a hockey team is a system.

Modeling/Explanation:
1. Start the lesson off by showing highlights from a hockey game.
2. Introduce the blank hockey rink sheet to the students. Ask them if they know how many players are on the ice at one time.
3. Hand out blank hockey rink sheets to each students or pairs.
4. Ask the students to place where they think each position of the hockey team are located.
5. Have students use the Internet to research hockey positions and their roles.
6. After students have had time to research and write down their roles, have students re-do their blank sheets if they feel the need.
7. Lead a discussion on the different roles of the players and keep bringing back the idea of a system to the students.
8. Take students to the gym or open area where floor hockey equipment is set out, but not laid out in positions.
9. Hand out the twelve labeled index cards and have students place them on the court that indicates the correct position.
10. After the cards are placed in the correct positions, hand each student a stick (go over safety rules with sticks) and assign them a spot on the court.
11. Lead the students through a modified floor hockey game. Stop the game every three minutes and move a position out of place (ex. Move a right winger to the left side of the court). Place the puck in the area where the player has just moved from. Let play begin. Continue with this a few times.
12. After about 20-30 minutes of play, stop and have the students circle up. Ask them what happened when the players were moved out of position and the puck was in the vacant spot.
13. Students should see that when a player was out of position, the other team had an easier time getting the puck.
14. Now lead the conversation back to the idea of systems and interdependent parts.

Independent Practice:
Students answer the following prompt: How is a hockey team a system? What are the parts of this system? What happens if the parts of the system are out of place?

Science 3rd Grade

Differentiated Instruction:
Adaptations (For Students with Learning Disabilities):
Allow for all IEP accommodations to take place.
Extensions (For Gifted Students)
Have students make a PowerPoint presentation of hockey positions and their roles.

Check for Understanding: Monitor students as needed.

Closure/Wrap-Up: Continue to play floor hockey throughout the year stressing positional play and using the system analogy.

Evaluation: Review writing prompt for understanding of interdependence within systems.

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Lesson 5: GOAL!

Concept/Topic to Teach: Predicting and Hypothesizing
Standards Addressed: S3-4:2 Students demonstrate their understanding of PREDICTING and HYPOTHEZISING by...identifying simple patterns of evidence used to develop a prediction and propose an explanation.

General Goal(s) – Expected Outcome: During this lesson, students will use Bruin player career statistics to predict leading goal scorers for the 2012-2013 season. Students will use the statistics to explain their prediction.

Specific Objectives:
- Students will access 2012-2013 roster players career statistics information through the Boston Bruins website.
- Students will use statistics to predict the top goal scorers for the 2012-2013 hockey season and provide concrete data to support their prediction.

Technology Integration:
Possible Website: www.bostonbruins.com

Required Materials:
- Computers or Internet access.
- Paper and pencil or computer based program such as Pages or Microsoft Word

Modeling/Explanation:
1. Go to www.bostonbruins.com
2. Click on stats
3. Review last year’s stats for the current Bruins players
4. Using this information, make a prediction as to who you think will be the leading goal scorers for the Bruins this year (students may choose to rank the goal scorers from 1-5 or may just predict the number one goal scorer).
5. Write an explanation, using your data, as to why you made your prediction.
6. Follow the Bruins statistics throughout the year.

Independent Practice:
Students will access statistics at least two times per week to keep track. They may not change their predictions, but may make observations as to why they think their prediction will be correct or if they feel it will not be. The key is to use the data to support their reasoning.

Differentiated Instruction:
Adaptations:
- Allow all IEP or special education adaptations to take place.
- Allow students to partner with another student.
Extensions:
- Students can also predict the assist leader and penalty minute leader based on data from statistics.

Check for Understanding:
As the teacher, monitor if students’ predictions are based on the stats that would support the prediction. If students are making predictions based on areas other than “reliable stats”, redirect them. For example, if students are predicting the leading goal scorer because they “like” the player, redirect them to the stats as evidence.

Closure/Wrap-Up:
Continue checking in with students throughout the year.

Evaluation: Use the student generated prediction as a basis for evaluating their understanding of predicting and supporting their predictions with data.
*Teacher note: For the 2011-2012 season, Tyler Seguin scored the most goals (29), Brad Marchand scored 28 and Milan Lucic scored 26.
**Teacher note: You may want to address issues that can influence goal scoring, such as injury.