

## LESSON 5: STRENGTH OF GRIP

### Grade-Level Outcomes

#### Primary Outcomes

**Lifetime activities:** Demonstrates competency and/or refines activity-specific movement skills in 2 or more lifetime activities (outdoor pursuits, individual-performance activities, aquatics, net/wall games or target games). (S1.H1.L1)

**Safety:** Applies best practices for participating safely in physical activity, exercise and dance (e.g., injury prevention, proper alignment, hydration, use of equipment, implementation of rules, sun protection). (S4.H5.L1)

#### Embedded Outcomes

**Fitness knowledge:** Relates physiological responses to individual levels of fitness and nutritional balance. (S3.H8.L1)

**Working with others:** Uses communication skills and strategies that promote team or group dynamics. (S4.H3.L1)

### Lesson Objectives

The learner will:

- apply the concept of strength of grip to personal route development.
- develop a climbing goal for a route and share it with the spotter.
- execute a proper figure eight on a bite knot.
- engage in safe climbing practices.

### Equipment and Materials

- Traverse wall
- 8-foot (2.4 m) dynamic climbing rope (8)
- Portable slackline (4)
- Dumbbells (8 sets)
- Kettlebells (8)
- Body bars or a variety of weights (8 to 16)
- Station task cards
- Chalk

### Introduction

*Today, I will introduce the concept of strength of grip and demonstrate the figure eight on a bite knot. Before we try that, let's see your overhand on a bite that you practiced for homework.*

## Instructional Task: Strength of Grip

### ■ PRACTICE TASK

Ask students to share situations where they have been getting tired on the wall. This leads to a discussion about the strength of the grip students are using and how over-gripping can wear a climber out. Also, using big muscle groups supports endurance.

#### Guiding questions for students:

- What do you notice about your climbing as you get tired?
- What are some strategies you can use to minimize fatigue while climbing?

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**EMBEDDED OUTCOME: S3.H8.L1.** Use the discussion to talk about fatigue in climbing, the importance of fitness, and eating for energy balance throughout the day.

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## Student Choices/Differentiation

Students may review video clips of climbers with great and less than great strength of grip.

## What to Look For

- Student talk is on task.
- Students are talking to each other and practicing the skills of SPACE (silence, paraphrasing, accepting language, clarifying questions, evidence).

## Instructional Task: Figure Eight on a Bite

### ■ PRACTICE TASK

Ask students to build on their previous learning and anticipate what a figure eight on a bite might look like. Then ask for a volunteer to tie what she thinks the knot looks like for the class.

## Refinement

Although most students will have no trouble connecting this knot to the previous lesson, if some do, have them tie the figure eight knot, then tie the overhand on a bite, and then attempt a figure eight on a bite.

## Student Choices/Differentiation

Students may review a video clip of tying a figure eight on a bite.

## What to Look For

- Students are engaged.
- Students are making connections between the knots from earlier lessons.

## Instructional Task: Stations Activity

### ■ PRACTICE TASK

Students participate at each station for 6 minutes, with 30 seconds in between stations.

Use different exercises for Station 5, different movements for Station 4, and different routes for Stations 1 and 2. At the traverse wall station, students can use any hold to complete the activity.

1. Traverse wall
2. Traverse wall: three points on the wall
3. Knot tying: figure eight on a bite knot
4. Balance (slackline): simple steps
5. Muscular endurance: circuit

## Extensions

- At the knot station, students tie all the knots learned up to this point without looking at the rope. This creates an opportunity to visualize the knot. Tell students to focus on applying past knowledge.
- Students can try different movements on the slackline.
- Students can repeat the traverse using a different route.

## Refinement

At the climbing station, students focus on personal goals for the route. They share their goals with a spotter, and the spotter supports the climbers with positive feedback and encouragement.

**EMBEDDED OUTCOME: S4.H3.L1.** Provide the spotters with examples of appropriate feedback for the climber. Provide positive reinforcement when a spotter gives appropriate feedback and support.

## **Student Choices/Differentiation**

- Students choose their partners.
- Students choose their routes.
- Students may review a video clip of tying a figure eight on a bite.

## **What to Look For**

- Students are on task and making safe decisions.
  - Students are implementing proper climbing technique, spotting technique, and communication.
  - Students' muscular strength and endurance are improving.
  - Students are effectively using larger muscle groups when climbing.
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## **Formal and Informal Assessments**

- Teacher assessment of students' knots

## **Closure**

- How did our discussion about strength of grip contribute to your success as a climber?
- Provide one specific example of how your spotter helped you stay on the wall and work toward your goal.

## **Reflection**

- Were students able to apply static climbing to their route climbing?
- How are students doing with overall fatigue, and what role does strength of grip play?

## **Homework**

*Be able to tie a figure eight on a bite without looking at the rope. A video is posted on the school's physical education website for your review.*

## **Resources**

Local climbing gym instructor

Internet keyword search: "figure eight on a bite," "grip strength in climbing," "fatigue in climbing," "fitness for climbing"