

## LESSON 4: BIKE FITTING AND CHANGING A FLAT

### Grade-Level Outcomes

#### Primary Outcomes

**Fitness activities:** Demonstrates competency in 2 or more specialized skills in health-related fitness activities. (S1.H3.L2)

**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 Outcome

**Working with others:** Solves problems and thinks critically in physical activity and/or dance settings, both as an individual and in groups. (S4.H4.L1)

### Lesson Objectives

The learner will:

- describe how to fit a bike properly.
- discuss the importance of proper bike fit.
- change a flat tire.

### Equipment and Materials

- Personal bikes
- Tire iron and tools for changing a flat
- Wrench or Allen wrench
- Multiple bike pumps
- String
- Measuring tape
- Bike trainers, if possible: 1 trainer per 2 students

### Introduction

*Until now, we have discussed preparing to train. Now, we will shift focus to the individual physical components of a triathlon to learn more about how to maximize your potential. We'll start today with the bike. It's important to fit the bike to the cyclist properly to reduce injuries and allow for a more efficient ride. You also need to know how to change a tire because a flat tire is one of the most common problems out on the road. Please hand in a copy of your training plan.*

## Instructional Task: Bike Fit

### ■ PRACTICE TASK

Show a video or bring in an expert from a local bike shop to give a tutorial on how to fit a bike. You can view a basic bike fit video at [www.youtube.com/watch?v=VrZBjOloChg](http://www.youtube.com/watch?v=VrZBjOloChg).

## Extension

Pair students up. Each pair works together to fit each other on their bikes.

1. Students ride their bikes as is.
2. Students put the bikes on a trainer.
3. Peers fit students on their bikes, completing a checklist for their partners.
4. Students re-ride their bikes after proper fitting.
5. Students use the bike fit checklist to check fit.

## Refinements

- Watch for too much extension on the downstroke. Remind students that the toes should not point at six o'clock and knees should have a slight bend at the bottom of the downstroke. If this is not the case, the seat might be too high.
- Hands should rest comfortably on the hoods, with arms bent slightly. Upper body should be relaxed. If students are hunched over, the seat might be too low or too far forward, or the stem might need an extender.
- If students are stretched out too far, arms extended fully, the seat might be too high or too far back, or the stem might need to be shortened.

## Guiding questions for students:

- How does the fit of the bike affect movement efficiency?
- How does proper bike fit reduce injury?
- Did you feel a difference between riding before and after being fitted on your bike?

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**EMBEDDED OUTCOME: S4.H4.I.1.** This is a good opportunity for students to use problem-solving skills to fit the bike to a partner, using guidelines for proper fit.

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## Student Choices/Differentiation

Allow students to use a device to replay the video, or provide a list of fit guidelines.

## What to Look For

- Students are making appropriate adjustments to the bikes.
- Students are working cooperatively to measure bike fit.
- Students are able to apply the guidelines to achieve a comfortable fit.

# Instructional Task: Practice Ride

## ■ PRACTICE TASK

Have students take their bikes on a short ride around the school grounds or a closed parking lot to test out their fit and comfort level. Before mounting the bikes, review key points of shifting gears and braking.

## Student Choices/Differentiation

Students may vary hand position from the bars to the drops (road bike).

## What to Look For

- Students appear comfortable on their bikes and relaxed in the upper body.
- Knees are bent slightly on the downstroke.
- Students are shifting at the appropriate time.

## Instructional Task: Change a Flat Tire

### ■ PRACTICE TASK

Watch a video on how to change a flat tire, such as the video found at [www.youtube.com/watch?v=-ZbeR0mJBkk](http://www.youtube.com/watch?v=-ZbeR0mJBkk).

### Extensions

- Students flip the front-wheel quick-release lever, take off the front wheel, let out any air that remains, remove the flat inner tube and replace it with a new inner tube. After re-inflating the tire, now complete with a new inner tube, place wheel back on the bike and tighten the quick-release lever.
- Students change a flat on the rear tire (more difficult because it involves disengaging the bike chain from the gear wheels, then re-engaging it).

### Guiding questions for students:

- Was it more difficult to change the front tire or back?
- Why?
- What equipment do you need to have with you when you ride? Answer: air pump, spare inner tubes, tire lever.

### Student Choices/Differentiation

- Allow students to work in pairs.
- Allow students to use a device to replay the video, or provide instructions for fixing a flat tire.

### What to Look For

- Students are able to take the tire off the rim.
- Students are able to use the tools correctly.
- Students put the tire back together fully and filled it with air.

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## Formal and Informal Assessments

Bike fit checklist

### Closure

- The goal today was to fit your bikes individually to increase your efficiency on the bike and decrease your likelihood of injury. As with any motor movement—running, biking, swimming—over time, if we perform the movement incorrectly or inefficiently, our bodies will react: knee pain, hip pain, shoulder pain.
- Our goal is to always have clean movements that allow us to create efficient power as we increase our strength in that movement.
- With our bikes fitting properly and our knowledge of how to fix a flat, we will go for a short group ride in our next class to work on rules of the road and bike etiquette.

### Reflection

- Were all students able to adjust their bikes?
- Were students successful in changing a flat? Were they still having difficulties?
- Review training plans and look for common errors and misconceptions.

## Homework

- Continue working on your research abstracts.
- Continue your journals. I will collect them next class for feedback.
- Review road rules for cycling on the school's physical education website.

## Resources

Local bike shop for instructional help

How to Do a Basic Bike Fit: [www.youtube.com/watch?v=VrZBJOloChg](http://www.youtube.com/watch?v=VrZBJOloChg)

How to Fix a Flat: [www.youtube.com/watch?v=-ZbeR0mJBkk](http://www.youtube.com/watch?v=-ZbeR0mJBkk)

Internet keyword search: "how to fit a bike," "how to change a flat bike tire"