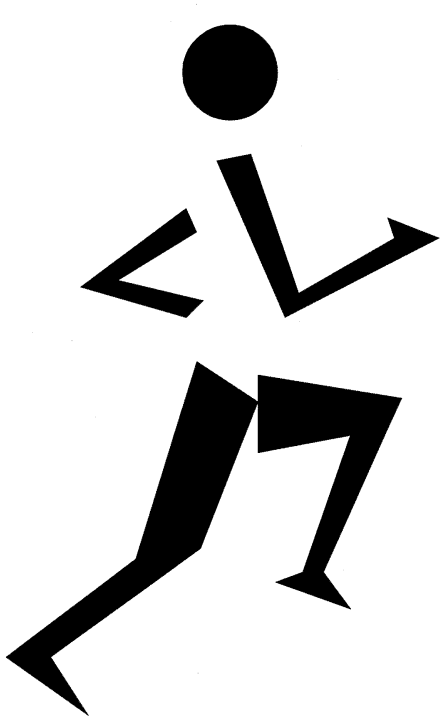
Grade 8

2. Fitness Management

The student will demonstrate the ability to develop and follow a personal fitness plan for lifelong physical activity and well-being.



PRESCRIBED LEARNING OUTCOMES	SUGGESTIONS FOR INSTRUCTION
Students will...	
❑ **K.2.8.A.1 Identify the five health-related fitness components** (e.g., cardiovascular endurance, muscular endurance, muscular strength, flexibility, body composition…) **and their importance to a balanced fitness plan.**	♦ **Rotating Reel** Have students, in groups of three, discuss a variety of questions that deal with the five health-related fitness components and their importance to a balanced fitness plan. **Examples of Questions:** • If you participate in yoga, which health-related fitness component(s) are you using? Which are you missing? • If you participate in gymnastics, which health-related fitness component(s) are you using? Which are you missing? • If you participate in hockey, which health-related fitness component(s) are you using? Which are you missing? • If you participate in weight training, which health-related fitness component(s) are you using? Which are you missing? After each question, allow students some time to discuss it within their groups. Have one student from each group go to the next group and share the answer. As a class, briefly discuss the responses to each question before moving on to the next question. Follow up with a class discussion on what is a balanced fitness plan and why it is important.
Curricular Connections **ELA:** GLO 1—Explore thoughts, ideas, feelings, and experiences. GLO 3—Manage ideas and information. **PE/HE:** GLO 2—Fitness Management (K.2.8.C.2, K.2.8.C.4, S.2.8.A.1a, S.2.8.A.3a, S.2.8.A.3b) GLO 4—Personal and Social Management (K.4.8.A.2a, K.4.8.A.2b, S.4.8.A.1) GLO 5—Healthy Lifestyle Practices (S.5.8.A.2, S.5.8.A.3a, S.5.8.A.3b)	♦ **Word Splash** Have students create a Word Splash (see *Success for All Learners* 6.28) that includes the specific activities/terms associated with the five health-related fitness components. Ask students to include an answer key with the definitions to post so that others can check meanings if they are unsure. Have students participate in a Word Splash as a warm-up or cool-down activity. ♦ **What's Behind You?** Display a poster of terms and definitions of the health-related fitness components on the wall. Using the What's Behind You? strategy, organize students into pairs. Have one student stand with his or her back to the poster and the other stand facing it. The student facing it asks the partner specific teacher-generated question(s) related to the poster content. Partners switch roles when one student provides the correct answer. Partners may give hints when they are first learning. **Variation:** Students can make up questions related to the poster content to ask their partner.

TEACHER NOTES

SUGGESTIONS FOR ASSESSMENT

♦ **Questioning/Interview: Rotating Reel**

Peer Assessment: Inventory

By asking questions, have small groups of students identify the five health-related fitness components and their importance to a balanced fitness plan.

♦ **Paper and Pencil Task: Word Splash**

Teacher Assessment: Checklist

Have students create their own Word Splash and answer key with definitions, using specific terminology associated with health-related fitness components and their importance to a balanced fitness plan. Check the Word Splash sheets using the following criteria.

Suggested Criteria:

Students

- ❑ identified the main terms associated with the health-related fitness components
- ❑ provided correct definitions

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **K.2.8.C.1a Identify the names of muscle groups and specific muscles** (i.e., biceps, triceps, pectorals, abdominals, quadriceps, deltoids, trapezius, latissimus dorsi, hamstrings, hip flexors) **and primary action** (i.e., flexion, extension, abduction, adduction, rotation) **across the various joints** (e.g., knee, elbow, hip...).

Curricular Connections
ELA:
GLO 3—Manage ideas and information.
PE/HE:
GLO 2—Fitness Management (K.2.7.C.1a)

SUGGESTIONS FOR INSTRUCTION

♦ Warm-up Stretch

Have students perform a variety of stretches during the warm-up of each class and indicate the muscle names, their primary actions, and joints involved. After the warm-up activity, have students complete a chart such as the following.

Muscle Chart

Muscle	Primary Action	Joint Involved
Biceps	flexion, supination	elbow
Triceps	extension	elbow
Pectorals	flexion, adduction, rotation (medial)	shoulder
Abdominals	flexion	spinal column (between vertebrae)
Quadriceps	extension	knee
Deltoids	abduction, flexion, extension	shoulder
Trapezius	extension	spinal column (between vertebrae)
Latissimus Dorsi	extension, adduction, rotation (medial)	spinal column (between vertebrae)
Hamstrings	flexion, extension	knee
Hip Flexors	flexion, extension	hip

♦ Rotating Reel

Have students, in groups of three, discuss a variety of questions that deal with muscles and the primary actions that they perform.

Examples of Questions:

- Hamstrings allow the knees to bend so that the feet move towards the buttocks. What is the name for this action?
- What is the name for the action of the knee when you kick a ball?

After each question, allow students some time to discuss it within their groups. Have one student from each group go to the next group and share the answer. As a class, briefly discuss the responses to each question before moving on to the next question.

TEACHER NOTES

Display posters around the gym to assist students in learning the locations of muscles and their actions.

Use appropriate terms when explaining or demonstrating different exercises, where possible. Ensure that students understand the basic movements of each major muscle group or specific muscle identified in learning outcome K.2.8.C.1a and the meaning of the terms flexion, extension, abduction, adduction, and rotation in relation to the body.

Also see Appendix I: Glossary for definitions of terms.

Language Link:

When teaching vocabulary related to health content areas or specific sports, encourage students to learn the terms in their home language or in another language (e.g., French, Ukrainian, Mandarin, Cree, Ojibway), especially in communities where a particular culture is represented.

SUGGESTIONS FOR ASSESSMENT

- **Paper and Pencil Task: All Activities**
  Teacher Assessment: Inventory

  Have students write a quiz to determine their knowledge of muscle names, locations, actions, and the joints involved in the actions. In the quiz, include a diagram of the human body and have students identify the correct location of muscles.

  Refer to BLM 7–3: Muscle Mania.

- **Paper and Pencil Task: All Activities**
  Teacher Assessment: Inventory

  Have students identify the names and the primary actions of muscles by completing a Word Splash (see *Success for All Learners* 6.28) and answer key with definitions.

- **Questioning/Interview: Rotating Reel**
  Peer Assessment: Inventory

  Have students, in groups of three, discuss a variety of questions that deal with muscles and the primary actions that they perform.

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **K.2.8.C.1b Explain the effects of exercise on use** (i.e., increased size and strength of muscles, ligaments, and tendons; increased muscular capillary action; hypertrophy) **and overuse** (i.e., fatigue, injury, muscle soreness) **of muscles.**

Curricular Connections

ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.

SUGGESTIONS FOR INSTRUCTION

♦ Myth: No Pain, No Gain!

Have students participate in the following circuit activities focusing on muscular strength and endurance. Discuss the effects of exercise on use and overuse of muscles.

Sample Circuit Activities

- **Push-ups** (upper body—muscular strength)
  - — tighten abdominal muscles
  - — keep back straight
  - — bend elbows to a 90° angle
  - — lead with the chest

- **Partial Curl-ups** (lower body—muscular endurance)
  - — reach hands forward to try to touch kneecaps

- **Hamstring Curls** (lower body—muscular endurance)
  - — use surgical tubing
  - — lie on floor on belly
  - — bend knee and move foot towards the head up to a 90° angle
  - — keep both hips on floor

- **Medicine Ball Partner Pass** (upper body—muscular strength)
  - — pass and catch
  - — bend arms and legs when catching to absorb the force

- **Calf Raises** (lower body—muscular endurance)
  - — place toes on an elevated area to obtain full range of motion in ankles
  - — keep body tall

  Variation: Put one foot behind the other to work out one leg, and then switch to the other leg.

- **Chest Muscle Extensions** (upper body—muscular strength)
  - — use surgical tubing, with one end in each hand
  - — stretch tubing by moving hands sideways and release slowly

- **Biceps Curls** (arms—muscular strength)
  - — stand on surgical tubing, with one end in hand
  - — stretch tubing by bending elbow up to chest

- **Triceps Extensions** (arms—muscular strength)
  - — use surgical tubing
  - — raise and bend arm so elbow points to ceiling
  - — reach down and behind with other arm, holding wrist straight
  - — keep resistance on tubing

- **Squats** (legs—muscular strength)
  - — squat as if sitting in a chair, weight on heels
  - — ensure knees do not go past toes (no less than 90° bend)
  - — keep head up

- **Seated Row** (upper body—muscular strength)
  - — place tubing around feet, so it is tight
  - — have palms facing each other
  - — lift back and chest
  - — squeeze shoulder blades while pulling back

TEACHER NOTES

Teach proper lead-up techniques and execution of exercises.

Encourage students to perform each circuit activity slowly using the correct technique at each activity station. Have students spend approximately two minutes at each station.

Include questions related to the effects of exercise on muscles as part of a fitness journal.

SUGGESTIONS FOR ASSESSMENT

- **Questioning/Interview: Myth: No Pain, No Gain!**
  Teacher Assessment: Inventory

  At the completion of the circuit, meet as a class and discuss how the exercised muscles feel.

- **Questioning/Interview: All Fitness Circuits**
  Teacher Assessment: Inventory

  Have students complete an Exit Slip called Circuit Talk, using the following suggested questions.

Circuit Talk

Name _____ Date _____

1. What was your favourite station in the circuit? Explain.
   _____
   _____
2. What skill or station activity was the most challenging for you? Explain.
   _____
   _____
3. Pick an exercise and explain its effects on your muscle development.
   _____
   _____
4. Explain what would happen if you overused a specific muscle or muscle group.
   _____
   _____

PRESCRIBED LEARNING OUTCOMES	SUGGESTIONS FOR INSTRUCTION
Students will...	
❑ **K.2.8.C.2 Describe ways to apply the FITT principle** (i.e., frequency, intensity, time, and type of activity) **to health-related fitness components** (e.g., cardiovascular endurance, muscular strength, muscular endurance, flexibility, body composition…).	♦ **Personal Fitness Record** Each term, have students do the following: 1. Choose one or more of the health-related fitness components they want to improve. 2. Set a goal for the health-related fitness components they want to improve. 3. Using the FITT principle, develop an action plan to assist in reaching the goal. 4. Keep a daily log, recording all activities they performed while working towards the goal. **Variation:** Have students, in the last term of the school year, assess all the health-related fitness components.  Refer to BLM 7–6: Personal Fitness Record.
	♦ **Active Living Log** Have students keep track of their participation in physical activities on a monthly basis, using agendas, Active Living Logs, or Active Living Calendars, and describe how they incorporate the FITT principle and the health-related fitness components into their regular exercise routines.  Refer to BLM G–14: Active Living Calendar and BLM G–15: Active Living Log.
	♦ **Design a Workout** Divide students into small groups and give each group a scenario, with instructions to state the problem identified in the scenario, specify the health-related fitness component(s) involved and/or missing, and then use the FITT principle to suggest how to achieve benefits/improvements. **Sample Scenarios:** • Lindsay and her teammates are training for the Manitoba Marathon Relay. Lindsay is not crazy about running but, because she doesn't want to let down her teammates, she must get ready for the relay. She knows that there are other ways to train aerobically. Can you help her? • Adam has begun football tryouts and the practices are making him very tired. He did weight training for months leading up to the tryouts and cannot understand his situation. Describe how he could have trained to make his tryouts more successful.

Curricular Connections

ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.
GLO 3—Manage ideas and information.
GLO 5—Celebrate and build community.

PE/HE:
GLO 2—Fitness Management (K.2.8.C.2, K.2.8.C.4, S.2.8.A.1a, S.2.8.A.3a, S.2.8.A.3b)
GLO 4—Personal and Social Management (K.4.8.A.2a, K.4.8.A.2b, S.4.8.A.1)
GLO 5—Healthy Lifestyle Practices (S.5.8.A.2, S.5.8.A.3a, S.5.8.A.3b)

TEACHER NOTES

Have each student write a contract, to be signed by the student, teacher, and parent/guardian, indicating his or her goal and action plan. Have students use their agenda books to keep track of their participation in physical activities each month. Use a monthly calendar to record the physical activities in which students participate.

Ensure that students are able to recognize all the components of the FITT principle:

F = frequency

I = intensity

T = time

T = type of activity

SUGGESTIONS FOR ASSESSMENT

♦ Journal/Learning Log: Personal Fitness Record

Self-Assessment: Inventory

Have students record their action plans as they apply to their goals.

Suggested Criteria:

Students are able to

- ❑ set goals for the health-related fitness components
- ❑ write action plans using the FITT principle for the health-related fitness components
- ❑ keep a daily activity log

♦ Observation: All Activities

Teacher or Peer Assessment: Checklist

Have students form groups of four, designating one student as the recorder, another as the timekeeper, and one or two as the presenter(s). Have each group develop a task for each component of the FITT principle and present the group's results to another group or to the entire class.

Suggested Criteria:

Students are able to

- ❑ describe the FITT principle
- ❑ provide an example or task to match each component of the FITT principle

♦ Performance Task: Design a Workout

Peer Assessment: Checklist

Have students, in small groups, work on a given scenario. For each scenario, have students do and report on the following:

- ❑ Identify the problem.
- ❑ Identify the health-related fitness component(s) involved.
- ❑ Identify the health-related fitness component(s) missing.
- ❑ Use the FITT principle to suggest how to achieve benefits/improvements.

PRESCRIBED LEARNING OUTCOMES	SUGGESTIONS FOR INSTRUCTION
Students will...	
❑ **K.2.8.C.3 Identify three stages** (i.e., indirect, direct, identical) **of activity-specific warm-ups and examples of each stage for specific physical activities** (e.g., a soccer warm-up could include light running, specific leg-stretching exercises, easy dribbling/passing drills...).	♦ **Warm-up Stages** Have students participate in the following activity-specific warm-ups. Ask them to identify the stage of warm-up that they are experiencing. **1. Indirect Stage—Basketball:** Have students do the following warm-ups: • 4 jogging laps around the gym • 20 line jumps • 10 push-ups • 15 curl-ups • stretches (arms and legs) **2. Direct Stage—Basketball:** Have students, on one side of a basketball court, perform the following warm-ups: • Do lay-ups in two lines—one as shooters, one as rebounders. • Perform a three-person weave from the centre line towards a basketball hoop. **3. Identical Stage—Basketball:** Have students perform the following warm-ups: • Practise a “give and go” with groups of three from the centre line towards a basketball hoop. • Add defence and play “three on two.” **Variation:** Discuss with students the types of warm-ups they do when they participate in school- or community-based sports or physical activities.

Curricular Connections
ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.

TEACHER NOTES

Ensure that students understand the importance of doing warm-ups before and cool-downs after participating in physical activities. They also need to understand that warm-ups should be designed with the specific sport or physical activity in mind.

Encourage students to research information related to the sports or physical activities of interest to them, either those they are currently involved in or would like to try.

SUGGESTIONS FOR ASSESSMENT

♦ **Performance Task: Warm-up Stages**

Teacher Assessment: Inventory

In daily warm-ups, ask students to indicate, with a show of hands or by running to posted signs (indirect, direct, or identical), which stage or type of warm-up they are performing.

Suggested Criteria:

Look for correct identification of the stages of activity-specific warm-ups:

- ❑ indirect stage
- ❑ direct stage
- ❑ identical stage

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **K.2.7.C.4 ➟ K.2.8.C.4 Identify personal factors and preferences for choosing physical activities** (e.g., personal interests, influence of friends, appreciation of the outdoors, affiliation, competition, cooperation, fun...) **for fitness and health.**

Curricular Connections

ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.

SUGGESTIONS FOR INSTRUCTION

♦ Chalk Talk

As a class, brainstorm ideas for why people choose specific physical activities in which to participate.

♦ Do It for Yourself

Have students fill out a questionnaire that helps them to identify the personal factors and preferences that affect their choice of physical activities.

Examples of Questions:

- In what sports or physical activities do you like to participate?
- What sports or physical activities do you like to do with your friends for enjoyment?
- What sports or physical activities do you like to do outdoors? In winter? In summer?
- What motivates you to participate in physical activities or sports? Rank the following reasons or motivating factors in order of importance:
  - — health benefits
  - — weight management
  - — love for the outdoors
  - — time with friends
  - — challenge associated with competition
  - — fun/enjoyment
  - — skill improvement
  - — stress reduction
  - — other

TEACHER NOTES

Discuss the issues that discourage students from participating, especially those related to female participation in physical activity. Contact the Manitoba Physical Education Teachers Association (MPETA) for resources that address this concern.

For more ideas, see *The Canadian Active Living Challenge: Leader's Resource Tool Kit, Program 3* (CAHPER/CIRA).

Aboriginal Link:

Choose traditional Aboriginal games that provide challenges for developing strength, eye-hand coordination, and target/accuracy skills.

SUGGESTIONS FOR ASSESSMENT

♦ **Journal/Learning Log: All Activities**

Self-Assessment: Inventory

Ask students to write a journal entry describing the types of activities in which they participate most often and explain why.

Have students share their entry with others using a mixer-type activity such as Think-Pair-Share (see *5–8 ELA*, Strategies–15).

Suggested Criterion:

Students are able to

❑ understand that people participate in activities regularly when the activities are enjoyable, done with a friend, and so on

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **S.2.8.A.1a Participate in fitness activities that use the FITT principle and contribute to personal health-related fitness goals.**

Curricular Connections

ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.

PE/HE:
GLO 2—Fitness Management (K.2.8.C.2, K.2.8.C.4, S.2.8.A.1a, S.2.8.A.3a, S.2.8.A.3b)
GLO 4—Personal and Social Management (K.4.8.A.2a, K.4.8.A.2b, S.4.8.A.1)
GLO 5—Healthy Lifestyle Practices (S.5.8.A.2, S.5.8.A.3a, S.5.8.A.3b)

SUGGESTIONS FOR INSTRUCTION

♦ Personal Fitness Record

Each term, have students do the following:

1. Choose one or more of the health-related fitness components they want to improve.
2. Set a goal for the health-related fitness components they want to improve.
3. Using the FITT principle, develop an action plan to assist in reaching the goal.
4. Keep a daily log, recording all activities they performed while working towards the goal.

Variation: Have students, in the last term of the school year, assess all the health-related fitness components.

Refer to BLM 7–6: Personal Fitness Record.

♦ Participation Exit Slip

Have students develop a participation rubric that clearly outlines the behaviours that show active participation in fitness activities. (Refer to the example below.) Post this rubric in the gym and, at the end of each class or many times throughout the year, have students line up, in alphabetical order (by last name), and report their participation for the day using the rubric. Collect these data and discuss the results with students individually.

Participation Rubric	
Rating	The student is
4	• **consistently** ready to participate, highly involved, and on task
3	• **frequently** ready to participate, highly involved, and on task
2	• **sometimes** ready to participate, highly involved, and on task
1	• **rarely** ready to participate, highly involved, and on task

TEACHER NOTES

Have each student write a contract, to be signed by the student, teacher, and parent/guardian, indicating his or her goal and action plan.

Make adaptations or modifications for students with special needs or medical conditions in order to facilitate participation.

Provide alternative activities for those students who are not able to participate fully.

For more ideas, see *The Canadian Active Living Challenge: Leader's Resource Tool Kit, Program 3* (CAHPER/CIRA).

The four components of the FITT principle are:

F = frequency

I = intensity

T= time

T= type of activity

Physical inactivity is a growing health issue with the adoption of a sedentary way of living and the increased use of technology. Encourage students to be active every day. Use motivational strategies such as doing physical activity interest surveys, providing choice, positive encouragement, enjoyable learning experiences, and a "non-threatening" environment, being a positive role model, and encouraging all students to participate in physical activities.

Students are encouraged to work within their target heart-rate zones so that they accumulate 60 minutes of moderate physical activity and 30 minutes of vigorous physical activity daily to achieve health

SUGGESTIONS FOR ASSESSMENT

♦ Journal/Learning Log: Personal Fitness Record

Self-Assessment: Inventory

Have students write an action plan for a health-related fitness goal using the FITT principle and then record the activities in which they participated during a given time frame to work towards achieving their goal.

Suggested Criteria:

Students should be able to

- ❑ set goals for the health-related fitness components
- ❑ write an action plan using the FITT principle for the health-related fitness components
- ❑ keep a daily physical activity participation log

♦ Performance Task: All Activities

Self-Assessment: Inventory

Have students rate their activity participation using a rubric developed by the class (or see the example on the previous page). Other criteria could be added.

Suggested Criteria:

The student

- ❑ participates in warm-up and cool-down activities in an appropriate manner
- ❑ performs exercises/activities that contribute to personal fitness development

TEACHER NOTES *(continued)*

benefits associated with participation in physical activities (see *Canada's Physical Activity Guide for Youth:* <http://www.hc-sc.gc.ca/hppb/paguide/youth.html>.

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **S.2.8.A.1b Participate in continuous aerobic activity related to personal target heart-rate zones.**

Curricular Connections
MA:
Statistics and Probability
Number
PE/HE:
GLO 2—Fitness Management (S.2.8.A.2)
SC:
Cluster 1—Cells and Systems

SUGGESTIONS FOR INSTRUCTION

♦ Stairway to Fitness

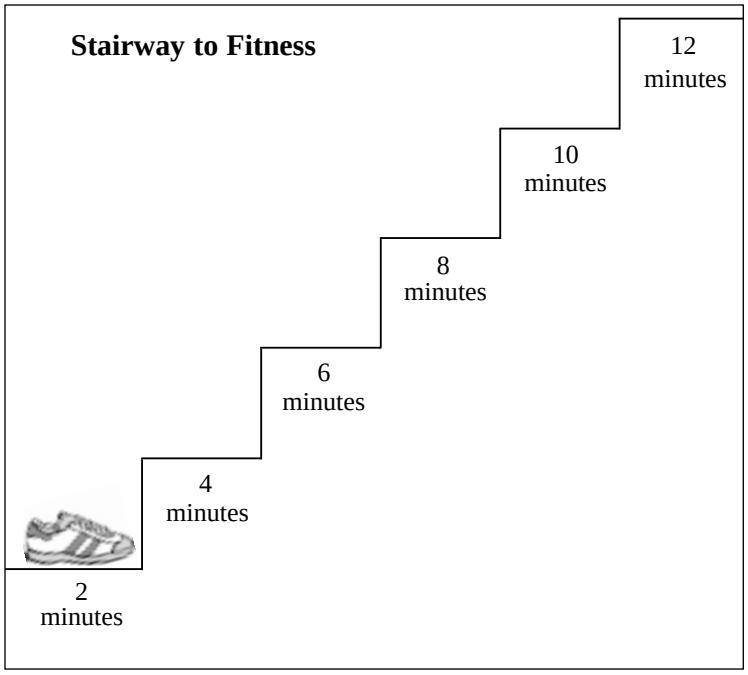
Have students perform a 12-minute aerobic walk/run using the following procedure. The goal is to be in the target heart-rate zone for 12 minutes.

Procedure for 12-Minute Walk/Run:

- Students take their heart rate on the neck every two minutes, or continuously with a heart-rate monitor.
- Students try to keep their heart rate in the target heart-rate zone.
- Students keep track of how many minutes they were in their target heart-rate zone. At the end of class, each student places a cut-out of a shoe (with his or her name on it) on a bulletin board display titled "Stairway to Fitness" (see example) at the appropriate number.

Variation: While students are running/walking, have them count the number of laps or calculate the distance that they travelled to see whether they are able to increase their distance in 12 minutes.

Example:



TEACHER NOTES

Have students participate in this learning activity every month to improve their cardiovascular fitness and to practise working in their target heart-rate zones.

See learning outcome S.2.8.A.2 for information on calculating target heart-rate zones.

SUGGESTIONS FOR ASSESSMENT

♦ **Journal/Learning Log: Stairway to Fitness**
Self-Assessment: Inventory

Have students

- keep a log of their results after each 12-minute walk/run
- graph their results and analyze them in a journal entry

♦ **Performance Task: All Activities**
Self-Assessment: Scoring Rubric

Have students rate their participation during an aerobic activity based on the following rubric.

Scoring Rubric	
Rating	The student
3	• is able to sustain participation for the required time based on functional capacity
2	• is able to sustain participation most of the time
1	• takes frequent rest breaks

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **S.2.8.A.2 Determine personal target heart-rate zone, using simple methods** (e.g., Karvonen formula, software programs...).

Curricular Connections
MA:
Number
PE/HE:
GLO 2—Fitness Management (S.2.8.A.1b)
SC:
Cluster 1—Cells and Systems

SUGGESTIONS FOR INSTRUCTION

♦ Calculating Your Target Heart-Rate Zone

Have students calculate their target heart-rate zone for moderate health zones and/or aerobic health zones (depending on their age), using the following steps. Students should stay within their target heart-rate zone while exercising.

Example: Calculating Moderate Health Zone for 13-Year-Old

1. Maximum heart rate for a 13-year-old is **220.**
2. Calculate maximum heart rate by subtracting age.
   220 – 13 = **207**
3. Multiply this number (207) by 50%.
   207 x 0.50 = 103.5
   50% of maximum is 104 beats per minute.
4. Multiply this number (207) by 70%.
   207 x 0.70 = 144.9
   70% of maximum is 145 beats per minute.

The target heart-rate zone for a 13-year-old is 104 to 145 beats per minute (bpm).

Variation: Students can use these numbers and calculate their target heart-rate zone for a 10-second count by dividing each number by 6.

Example:

104 bpm ÷ 6 = 17 (approximately)
145 bpm ÷ 6 = 24 (approximately)

The target heart-rate zone is 17 to 24 beats per 10-second count.

Note: Use the same steps to calculate the aerobic health zone (70% to 85%).

TEACHER NOTES

A **target heart-rate zone** is the heart rate within which the heart should beat to achieve the desired physiological benefits.

To develop aerobic capacity, the heart rate must reach a heart-rate range or zone to achieve the desired physiological benefits. Target heart-rate zones are calculated based on a percentage of maximum heart rate (220 – age).

For example:

- Moderate health zone (moderate intensity)—50% to 70% of maximum heart rate.
- Aerobic health zone (vigorous intensity)—70% to 85% of maximum heart rate.

(U.S. Department of Health and Human Services *et al.* 32)

Another method for calculating students' target heart-rate zones is the Karvonen method, which looks at the resting heart rate. For more information, see pages 25 to 31 and 73 to 74 of *Lessons from the Heart* (Kirkpatrick and Birnbaum) and pages 14 to 16 of *Fitness for Children* (Hinson).

Some teachers choose to use a 60% to 80% range rather than 50% to 70% (moderate intensity) and 70% to 85% (vigorous intensity) as an average of both. Also, when calculating target heart-rate zones, individual fitness levels and physical abilities need to be taken into consideration.

SUGGESTIONS FOR ASSESSMENT

♦ Paper and Pencil Task: Calculating Your Target Heart-Rate Zone

Teacher Assessment: Inventory

Students should be able to calculate the target heart-rate zone for any age. Have them ask their parents or other family members for their age and calculate their target-heart rate zone.

♦ Paper and Pencil Task: Calculating Your Target Heart-Rate Zone

Teacher Assessment: Quiz

Have students write a quiz to determine their knowledge about calculating target heart-rate zones for a variety of ages (e.g., 20-year-old, 35-year-old).

♦ Journal/Reflection: Calculating Your Target Heart-Rate Zone

Self-Assessment: Inventory

Have students

- record their target heart-rate zone in their journals
- calculate other target heart-rate zones for people of different ages, such as their parents, and record the information in their journals
- write a journal entry about how they will be able to use this target heart-rate zone in their physical education class

♦ Questioning/Interview: Calculating Your Target Heart-Rate Zone

Teacher Assessment: Inventory

Suggested Criterion:

Students should be able to

❑ state their target heart-rate zones as they participate in future physical education classes

PRESCRIBED LEARNING OUTCOMES

Students will...

❑ **S.2.8.A.3a Assess the level of ability in one or more health-related fitness components** (i.e., cardiovascular endurance, muscular endurance, muscular strength, flexibility) **of physical fitness.**

Curricular Connections

MA:
Statistics and Probability
Number

PE/HE:
GLO 2—Fitness Management (K.2.8.C.2, K.2.8.C.4, S.2.8.A.1a, S.2.8.A.3a, S.2.8.A.3b)
GLO 4—Personal and Social Management (K.4.8.A.2a, K.4.8.A.2b, S.4.8.A.1)
GLO 5—Healthy Lifestyle Practices (S.5.8.A.2, S.5.8.A.3a, S.5.8.A.3b)

SC:
Cluster 1—Cells and Systems

SUGGESTIONS FOR INSTRUCTION

♦ Fitness Assessments

Choose from the following list of assessment tasks pertaining to each of the health-related fitness components, or use other tasks or tests that are safe and reliable.

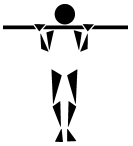
Cardiovascular Endurance:

- **6-, 8-, 10-, or 12-Minute Run:** Students count the number of laps completed in the time of the run.
- **Leger Beep Test:** This test uses an audiotape to control timed runs over a measured course, and an audio tone communicates timing information for the test subjects (runners). The tests are run continuously until the subjects can no longer continue or start to miss (arrive late at lines). The highest running pace and number of repetitions that the runner can accomplish successfully is then the player's rating.
- **Walk Test:** Available online at <http:www.motivationstation.net>.

Muscular Strength and Endurance (specific to muscle groups):

- Push-ups (full or modified)

- Pull-ups



- Curl-ups (cadence controlled)

- Bench-Steps

Flexibility:

- Modified Sit and Reach (one leg bent)

- Shoulder Stretch

TEACHER NOTES

A variety of fitness tasks or tests have traditionally been used to measure health-related fitness components. Before choosing a fitness-assessment task, check for reliability, validity, developmental appropriateness, ease of administration, and safety considerations. Use fitness testing or assessment as a strategy to help students monitor their own progress and set personal goals.

Beep tests can be ordered from:
Fitness Appraisal Certification
U de Montreal Kinesiologie,
CP 6128 Succursale Centre-ville,
Montreal QC H3C 3J7
Fax: 514-343-2181

Focus on fitness management and motivation towards participation in physical activity. Comparing students' scores and using extrinsic awards are discouraged.

The use of individual goal-setting techniques encourages students to focus on personal improvement and progress towards achieving personal goals rather than on comparisons.

Muscular strength and endurance components can be trained together. Activities may focus on strength for some students and endurance for others, depending on the number of repetitions they are capable of performing.

For information related to fitness assessment, refer to

- *Fitness Education for Children* (Virgilio)
- *Physical Best Activity Guide* (AAHPERD)
- *FITNESSGRAM® 6.0 Test Kit* (The Cooper Institute for Aerobics Research)

SUGGESTIONS FOR ASSESSMENT

♦ **Journal/Learning Log: Personal Fitness Record**
Self-Assessment: Inventory

Have students choose a number of exercises or assessment tasks that measure health-related fitness components. Explain proper technique, safety precautions, and procedures for each task. Have students practise the exercise or task, perform and assess it to determine their personal best, and set goals for personal improvement. Ask them to record this information.

Refer to BLM 7–6: Personal Fitness Record.

PRESCRIBED LEARNING OUTCOMES	SUGGESTIONS FOR INSTRUCTION
Students will...	
❑ **S.2.7.A.3b ➠ S.2.8.A.3b Chart own fitness results** (e.g., using information technology...) **throughout the year to determine effects of activity participation and/or specific training on personal progress.**	♦ **Personal Fitness Record** Each term, have students do the following: 1. Choose one or more of the health-related fitness components they want to improve. 2. Set a goal for the health-related fitness components they want to improve. 3. Using the FITT principle, develop an action plan to assist in reaching the goal. 4. Keep a daily log, recording all activities performed in working towards the goal. **Variation:** Have students, in the last term of the school year, assess all the health-related fitness components.  Refer to BLM 7–6: Personal Fitness Record.

Curricular Connections

ELA:
GLO 1—Explore thoughts, ideas, feelings, and experiences.

MA:
Statistics and Probability

PE/HE:
GLO 2—Fitness Management (K.2.8.C.2, K.2.8.C.4, S.2.8.A.1a, S.2.8.A.3a, S.2.8.A.3b)
GLO 4—Personal and Social Management (K.4.8.A.2a, K.4.8.A.2b, S.4.8.A.1)
GLO 5—Healthy Lifestyle Practices (S.5.8.A.2, S.5.8.A.3a, S.5.8.A.3b)

TEACHER NOTES

For information on teaching considerations and implementation guidelines related to fitness, refer to Guidelines for GLO 2—Fitness Management in the Overview of this document.

Have each student write a contract, to be signed by the student, teacher, and parent/guardian, indicating the student's goal and action plan.

SUGGESTIONS FOR ASSESSMENT

♦ **Journal/Learning Log: Personal Fitness Record**

Self-Assessment: Inventory

1. After completing the assessment of the health-related fitness components, have students set goals and record, in their learning logs, any activities in which they participate to attain their goal.
2. After reassessing their health-related fitness components, have student write a journal entry about whether or not they were successful in reaching their goal and explain why or why not.

Suggested Criteria:

Students are able to

- ❑ set goals for the health-related fitness components
- ❑ write an action plan using the FITT principle for the health-related fitness components
- ❑ keep a daily activity log

Fitness Management Outcomes: Grade 8

Knowledge

❑ **K.2.8.A.1 Identify the five health-related fitness components** (e.g., cardiovascular endurance, muscular endurance, muscular strength, flexibility, body composition…) **and their importance to a balanced fitness plan.**

❑ **K.2.8.C.1a Identify the names of muscle groups and specific muscles** (i.e., biceps, triceps, pectorals, abdominals, quadriceps, deltoids, trapezius, latissimus dorsi, hamstrings, hip flexors) **and primary action** (i.e., flexion, extension, abduction, adduction, rotation) **across the various joints** (e.g., knee, elbow, hip...).

❑ **K.2.8.C.1b Explain the effects of exercise on use** (i.e., increased size and strength of muscles, ligaments, and tendons; increased muscular capillary action; hypertrophy) **and overuse** (i.e., fatigue, injury, muscle soreness) **of muscles.**

❑ **K.2.8.C.2 Describe ways to apply the FITT principle** (i.e., frequency, intensity, time, and type of activity) **to health-related fitness components** (e.g., cardiovascular endurance, muscular strength, muscular endurance, flexibility, body composition…).

❑ **K.2.8.C.3 Identify three stages** (i.e., indirect, direct, identical) **of activity-specific warm-ups and examples of each stage for specific physical activities** (e.g., a soccer warm-up could include light running, specific leg-stretching exercises, easy dribbling/passing drills...).

❑ **K.2.7.C.4 ➠ K.2.8.C.4 Identify personal factors and preferences for choosing physical activities** (e.g., personal interests, influence of friends, appreciation of the outdoors, affiliation, competition, cooperation, fun...) **for fitness and health.**

Skills

❑ **S.2.8.A.1a Participate in fitness activities that use the FITT principle and contribute to personal health-related fitness goals.**

❑ **S.2.8.A.1b Participate in continuous aerobic activity related to personal target heart-rate zones.**

❑ **S.2.8.A.2 Determine personal target heart-rate zone, using simple methods** (e.g., Karvonen formula, software programs...).

❑ **S.2.8.A.3a Assess the level of ability in one or more health-related fitness components** (i.e., cardiovascular endurance, muscular endurance, muscular strength, flexibility) **of physical fitness.**

❑ **S.2.7.A.3b ➠ S.2.8.A.3b Chart own fitness results** (e.g., using information technology...) **throughout the year to determine effects of activity participation and/or specific training on personal progress.**

Attitude Indicators

2.1 Show an interest in and responsibility for personal fitness.

2.2 Appreciate the role and contribution of regular participation in physical activity for health and fitness.

2.3 Show respect and acceptance for physical and performance limitations of self and others.