



Building Better Bones Program
Class Number 2
“Bones - Move ‘em or Lose ‘em”
50 minutes

Lesson at a glance:

Regular physical activity improves health and a sense of well being. To build and strengthen bones, the activities must be weight bearing or strength training in nature. Weight bearing activities stimulate bone formation and also strengthen muscles. Physical activity also improves strength, balance and coordination, all of which are beneficial. In this lesson, students will learn about which activities build and strengthen their bones through four key words: push, pull, pound and pick-up. Students will plan and keep an activity log to evaluate their level of bone building activities.

Objectives:

At the end of the session, students should be able to:

1. Recognize weight bearing and lifting activities as those that help build and preserve bone. (Key words are push, pull, pound, pick-up)
2. Participate in at least four activities that strengthen bone.
3. Prepare and keep a physical activity log for at least one week.
4. Identify the recommendation for physical activity: accumulate 30 minutes or more of physical activity at least five days per week, preferably every day of the week.

Materials:

1. Two 1.5-liter water bottles
2. Mini Skeleton
3. A pair of dice
4. One quarter
5. Jump rope
6. Poster of the 4 “P’s”*
7. Poster of “Dice Activity”*
8. Dairy Council Frisbee “Bones - Move >em or Lose >em”

Handouts:

In-Class Handouts:

1. Are You Fit or What? Handout

Leave with Teacher Handouts:

1. Physical Activity Log
2. Master handout of the physical activities for the teacher
3. Teacher evaluation
4. *Power Up* – Dairy Council (Optional)

* Each county is responsible for these materials.

Introduction

Hi, I'm _____ and this program is Building Better Bones and this class today is the "Bones - Move 'em or Lose 'em". Today, we are going to explore how you can build dense bones and strong bodies through certain kinds of physical activity.

Bone is a living tissue that responds to activity by becoming stronger and more dense. Just as a muscle gets stronger and bigger the more you use it, a bone becomes stronger and denser, or more solid when you place demands on it. If your bones are not called upon to work, such as during physical activity, they do not receive any messages that they need to be strong. You cannot see your bones getting stronger with physical activity, but when you strike a tennis ball or land on your feet after jumping, messengers in your body tell your arm and leg bones to be ready to handle that weight and impact again.

In fact, if you x-ray the arms of a tennis player, you would see that the bones in the playing arm are bigger and denser than the bones in the other arm. (adapted from information on the National Osteoporosis Foundation web site)

Let's name some of the benefits from being physically active on a regular basis (*list these on newsprint or board*). Some of the examples may include:

- Build stronger muscles and bones
- Have good posture
- Have a healthy weight for your body size and shape
- Reduce stress
- Increase level of energy
- Sleep better
- Look healthy
- Have healthy skin

Any kind of physical activity is good for our overall health, but not all activity is created equal when it comes to building and strengthening healthy bone. It may sound strange, but the best activity to build dense bones and a strong body are those that put stress on them. (*Hang up the 4 P's poster*) A great way to remember the right kind of physical activities to build bone is to think **push, pull, pound or pick-up**. Pushing or pulling your muscles against gravity, "pounding" your bones (jumping rope) or picking up weight (weight lifting) are great ways to strengthen and keep your bones healthy.

(*Demonstrate each activity and have the students participate*)

Let's look at the different types of activities you might do to build bones.

- Put your hands together in front of your chest, fingers pointing upward toward the ceiling, and push together. What kind of activity is this? (Pushing)

- Now, lock your fingers together in front of your chest and pull outward. What kind of activity is this? (Pulling)
- Place a hand on a chair for balance and slowly raise and lower your leg behind you. What kind of activity is this (pulling)
- Pick up your water bottles and do some biceps curls. Which kind of activity is this? (Pick-up, weight lifting)
- When I jump rope like this, which type of activity am I doing? (Pounding)
- When I jog in place like this, which type of bone building activity is it? (Pounding)

So, to review, remember that picking-up weights (weight lifting) and doing activities that push or pull your muscles against gravity, and “pounding” will build your skeleton.

(Hold up mini skeleton) Look at the number of bones in our bodies. Does anyone remember how many bones you have in your body? You have 206 bones in your body. One type of exercise won't benefit all of our bones, so we need to do different kinds of activities that focus on each part.

(Point to the mini skeleton's legs) What are some good activities, games or sports for building leg bones? Have the students raise their hands and write the list on the board of those activities that are good for bone building in the legs.

(Move the skeleton's arms) What are some good activities, games or sports for building arm bones? Have the students raise their hands and write the list on the board that are good for bone building in the arms.

Running, walking, sprinting, jumping rope, track and field, ballet, gymnastics, soccer, dancing, volleyball, basketball, hiking up or down hill, stair-climbing, aerobics, weight -lifting, house work, cross country skiing, backpacking, tennis, gardening, rowing, push-ups, pull-ups or yard work (digging, raking) are good examples of activities that build better bone.

Good for overall health but not considered bone building: swimming & bike riding

Swimming and bike riding are super activities, great for your muscles, heart and lungs, and count as physical activity. Just remember that they don't count as a bone building activity.

So, you can see there are many activities you can choose from to build your bones and many of them are fun to do. Right now we are going to have you do some fun activities that are healthy for bones too.

Optional: Inside or Outside for the Activities

➤ Shuffle Foot - Five Minutes

Have the students find a partner. One person is the A same≡, the other is A different≡. The two players stand next to each other about 3 feet apart. They run in place 20 steps. On the 20th step, each player puts a foot forward. If the feet are the same (right, right; left, left), the student designated the “same” wins. If the feet are different, the student designated as different wins. The game continues to a set number of points.

➤ Rolling Dice - Five Minutes

Have one student roll one die. Perform the activity from the poster board that the die indicates (example #6 = jump on both feet). Have another student roll both dice. The entire class does the activity as many times as the dice indicate (example, jump on both feet, 8 times). The dice then go to the next student.

➤ Hide the Coin - Five Minutes

One student, the searcher, stands to the side with their eyes covered. One student is given the coin and hides it in their pocket. The searcher moves among the class trying to locate the coin, as the students walk or run in place. They walk or run faster as the searcher nears the child with the coin. The searcher tries to identify the student with the coin based on the reactions of the class. New searchers are appointed after each round.

➤ Who’s Leading? - Five Minutes

Have the students form a circle, either sitting at their desks or on the floor. One person is “it” and steps away from the circle and covers their eyes. Select a student to become the leader. The leader starts a motion such as jumping up and down, twisting back and forth, hopping on one foot, running in place, etc. and the class follows the movements. The child who is “it” uncovers their eyes and watches the group, as they change from one motion to another, and tries to determine who is leading. Players should cover up for the leader, who also tries to confuse the guesser by looking at the other players. The child who is “it” gets two guesses. The game seems to work best when the guesser is positioned in the center of the circle, because she cannot then observe all of the children at once.
(Have students return to their seats)

How many of you are doing physical activity at least once a week? (*have them raise their hands*)

Repeat asking the question with twice a week?, three times a week?, four times a week, etc. How many of you are doing activity everyday? OK. To get you started on building denser or more solid bones and strong bodies you are going to set an individual goal for physical activity for next week.

(Pass out the *Are You Fit or What? Handout.*) (*Read aloud each statement and have the students circle the picture that describes them best. Once all 20 questions have been answered have them count and total each picture then circle the corresponding number with the corresponding picture*)

on the graph to the right. Have them connect the circles.) Which section is the largest? Although there might be a part of you in 2, 3 or all 4 sections, the one that is the biggest defines your fitness style. If you are not in the upper right quadrant (*hold up the handout and point to the upper right quadrant*) you may want to make some small adjustments to your activity level and/or food choices for a healthier life style.

(Pass out the “Log your Activity” form.) Every day record an activity in the activity log after you have done it. Try to spend at least 30 minutes a day being active. Try to be active at least five days each week and preferably every day. When you have done 30 minutes of activity on at least five days in one week, ask your teacher to sign your log to receive your Building Better Bones Frisbee.

Leave the Dairy Council Frisbees with the teachers.

Summary:

1. Name the four key words that describe activities that build dense bone (push, pull, pick-up, and pound).
2. What are four different physical activities that help build bone? (Jump rope, jogging, basketball, soccer, gardening, etc.)
3. How often should you do physical activity each week? (At least 5 days a week, but preferably everyday)
3. What is the minimum number of minutes you should spend doing physical activity? (Accumulate 30 minutes or more)
4. What is the name of this program? (Building Better Bones Program)

Ideas for Going Further:

1. Encourage the teacher to use the PLAY program materials and have the students engage in 15 minutes of activity each day.
1. Suggest to the teacher teaming up the students. Have them keep the log for several weeks and make it into a contest for which team had the greatest amount of time engaged in activities.

Arizona Standards – Comprehensive Health Education Standards for Physical Activity

PA2-E1 Describe the relationship between a health lifestyle and feeling good

PO1 Give examples of the benefits derived from regular physical activity

PO2 Discuss several moderate to vigorous physical activities that provide personal pleasure

PA3-E1 Participate regularly in health-enhancing physical activities to accomplish personal health goals

PO1 Participate regularly in a physical activity that develops a health lifestyle

PO2 Describe health benefits that result from regular and appropriate participation in physical activity

PA3-E2 Participate in a variety of physical activities of personal interest

PO1 Identify at least one enjoyable activity they participate in daily (formal or informal)

PA7-E1 Establish personal physical activity goals

PO2 Participate daily in some sort of physical activity

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