Name: _____ Date: _____

Banking Bone Before Age Thirty

Circle group

In a museum, a bone looks like a dry white stick. In a living body, bone is active tissue. It is always being rebuilt. Cells called osteoclasts break down tiny bits of old bone. Cells called osteoblasts build new bone in its place. In kids and teens, building wins over breaking down. So the skeleton grows longer, wider, and denser.

The building does not last forever. Most people reach peak bone mass in early adulthood, often before age thirty. Peak bone mass is the most bone you will ever have. After that, the skeleton slowly loses a little density each decade. A person who starts adult life with lots of bone has more to use later. That lowers the chance of osteoporosis. This is a condition where bones break easily.

So the teen years are a good time to build. Bones get stronger when they work. Walking, running, jumping, and dancing tell bones to get stronger. Swimming is great for the heart and lungs. But water holds up your weight, so it does less for bone. Food matters too. Calcium is the main mineral in bone. Milk, yogurt, cheese, and leafy greens like kale have it. Vitamin D helps the body absorb calcium. Skin makes vitamin D in sunlight, and some foods have it too.

You do not need special tools. Active play, balanced meals, and time outside help build strong bones for life.

Questions

1. What do osteoblasts do?

_____

_____

2. When do most people reach peak bone mass?

_____

_____

3. Why are the teen years a good time to build bone?

_____

_____

4. What is the main mineral in bone?

_____

_____

5. What does vitamin D help the body do?

_____

_____

6. Why does swimming do less for bone than running?

_____

_____

7. What is osteoporosis?

_____

_____

Words to know

osteoblasts: cells that build new bone
density: how tightly packed and solid something is
peak: the highest point, the most of something
absorb: to take in and use, as the body does with food

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Banking Bone Before Age Thirty

Triangle group

A bone looks like a dry, chalky stick in a museum, but inside a living body it is active tissue that is constantly being rebuilt. Special cells called osteoclasts break down tiny bits of old bone, while cells called osteoblasts lay down new bone in their place. In children and teenagers, building outpaces breaking down, so the skeleton grows longer, wider, and denser.

This building does not go on forever. Most people reach their peak bone mass, the greatest amount of bone they will ever have, in early adulthood, often before age thirty. After that, the balance slowly tilts, and the skeleton loses a little density each decade. People who arrive at adulthood with a large bone savings account have more to draw on when they are older, which lowers the chance of osteoporosis, a condition in which bones break easily.

That makes the teen years a valuable time to invest. Bone responds to stress, so weight-bearing activities such as walking, running, jumping, and dancing signal the skeleton to strengthen itself. Swimming is excellent for the heart and lungs, but because water supports the body's weight, it does less to build bone. Food matters too. Calcium is the main mineral in bone, and good sources include milk, yogurt, cheese, and leafy greens such as kale. Vitamin D helps the intestine absorb calcium. The skin makes vitamin D when sunlight reaches it, and some foods supply it as well.

None of this requires special equipment. Regular active play, balanced meals, and time outdoors are an ordinary recipe for strong bones that will last a lifetime.

Questions

1. What do osteoblasts do?

_____

_____

2. When do most people reach their peak bone mass?

_____

_____

3. Why are the teen years a valuable time to build bone?

_____

_____

4. What is the main mineral in bone?

_____

_____

5. What does vitamin D help the body do?

_____

_____

6. Why does swimming do less to build bone than running?

_____

_____

7. What is osteoporosis?

_____

_____

Words to know

osteoblasts: cells that build new bone
density: how tightly packed and solid something is
peak: the highest point, the most of something
weight-bearing: making your bones hold up your body's weight
absorb: to take in and use, as the body does with food

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Banking Bone Before Age Thirty

Square group

In a museum display, a bone resembles a dry, chalky stick, yet inside a living body it is vigorously active tissue that is perpetually being remodeled. Specialized cells called osteoclasts dissolve minute fragments of old bone, while cells called osteoblasts deposit fresh bone in their place. Throughout childhood and the teenage years, construction outpaces demolition, so the skeleton becomes longer, wider, and denser.

This construction does not continue indefinitely. Most people attain their peak bone mass, the greatest quantity of bone they will ever possess, in early adulthood, frequently before the age of thirty. Thereafter the balance gradually tilts, and the skeleton sheds a small amount of density each decade. Those who enter adulthood with an ample bone savings account have more to draw upon in later life, which reduces the likelihood of osteoporosis, a condition in which bones fracture easily.

The teenage years are consequently a valuable time to invest. Bone responds to mechanical stress, so weight-bearing activities such as walking, running, jumping, and dancing signal the skeleton to reinforce itself. Swimming is superb for the heart and lungs, but because water supports the body's weight, it contributes less to building bone. Nutrition matters as well. Calcium is the principal mineral in bone, and dependable sources include milk, yogurt, cheese, and leafy greens such as kale. Vitamin D helps the intestine absorb calcium. The skin manufactures vitamin D when sunlight reaches it, and certain foods provide it too.

None of this demands specialized equipment. Regular active play, balanced meals, and time spent outdoors form an ordinary recipe for strong bones that will serve a person for a lifetime.

Questions

1. What is the role of osteoblasts?

_____

_____

2. At what point do most people attain peak bone mass?

_____

_____

3. Why are the teenage years a valuable time to build bone?

_____

_____

4. Which mineral is the principal one in bone?

_____

_____

5. How does vitamin D help the body?

_____

_____

6. Why does swimming contribute less to building bone than running does?

_____

_____

7. What is osteoporosis?

_____

_____

Words to know

osteoblasts: cells that build new bone
density: how tightly packed and solid something is
peak: the highest point, the most of something
weight-bearing: making your bones hold up your body's weight
absorb: to take in and use, as the body does with food

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Banking Bone Before Age Thirty

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Banking Bone Before Age Thirty

Easier · 234 words · Flesch-Kincaid grade 4.1

1. They build new bone.
2. In early adulthood, often before age thirty.
3. Building wins over breaking down then, so more bone is saved for later.
4. Calcium.
5. Absorb calcium.
6. Water holds up your weight, so the bones feel less stress.
7. A condition where bones break easily.

Triangle: Banking Bone Before Age Thirty

This passage · 265 words · Flesch-Kincaid grade 8.8

1. They lay down new bone.
2. In early adulthood, often before age thirty.
3. Building outpaces breaking down then, so more bone can be stored for later life.
4. Calcium.
5. Absorb calcium from food in the intestine.
6. Water supports the body's weight, so the bones feel less stress.
7. A condition in which bones break easily.

Square: Banking Bone Before Age Thirty

Harder · 270 words · Flesch-Kincaid grade 11.4

1. They deposit fresh bone.
2. In early adulthood, frequently before the age of thirty.
3. Construction outpaces demolition then, so more bone can be stored for later life.
4. Calcium.
5. It helps the intestine absorb calcium.
6. Water supports the body's weight, so the bones experience less stress.
7. A condition in which bones fracture easily.