

# INV. 4 ACTIVITY—HUMAN SKELETON (PAGE 1 OF 4)

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## Investigation

The human body is one of the most extraordinary systems in the whole world. It is designed for action and movement. Many of our body parts come into action when we perform different movements. We are going to start our investigation of the human body by observing action. Find a family member, perhaps a younger sibling, to help you as a partner for a few minutes.

Ask your partner to do jumping jacks for 30 seconds while you watch. What body parts are in action? Observe everything from their head all the way down to their feet. When they are done, write down your observations in your notebook—what body parts did they use to do the jumping jacks?

Then it is your turn. First, read your list to your partner. You will do jumping jacks for 30 seconds and see if your partner observes any body parts move that you did not have on your list. If you agree, add them to your list.

### Focus Question: What can we learn about the human skeleton?

- Where are your **bones**?
- Can you feel any of them? What do the bones feel like? Feel your wrist, your hands, your arms, your shoulders, and your face.

The hard parts under your skin are bones. Bones are hard and they do not bend. In your body, where things bend, bones come together at **joints**.

- How many bones do you think you have in your body?
- Where do you have some joints in your body? Write some of those places down in your notebook.

Your skeleton is a system—a system of bones, joints, and connections. Let's feel beneath our skin and count up the bones to find out how many there are in the human skeleton. Record your numbers in your notebook:

- Leg (including foot): \_\_\_\_\_
- Arm (including hand): \_\_\_\_\_
- Head or skull (not the neck—teeth are not bones): \_\_\_\_\_
- Torso (including neck, shoulders, and hips): \_\_\_\_\_

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**Study the Mr. Bone puzzle pieces on the next 2 pages.**

Look carefully at each piece to observe the outline of the bones. Some puzzle pieces may be made up of more than one bone.

Before cutting, try and count the total number of bones in all the pieces. Do you want to change your answers from before?

**Carefully cut out each puzzle piece on the outer-most solid line.** The piece number should remain on the piece that you cut out.

Arrange the pieces on a table surface to make a human skeleton. Consider if you have each piece in the correct place. To check your work, go to FOSSweb.

**Engage with Online Activity—“Mr. Bones”**

To access the Online Activities, login to FOSSweb with the user name and password provided by your teacher. Click on the Structures of Life Module, and go to the Online Activities. Find “Mr. Bones.”

Put the pieces of the online puzzle together. If the skeleton waves you have the pieces in the right spot.

Back to your paper puzzle pieces. If we were in school we would have paper fasteners for you to put through the black dots on the bone pieces. Since you do not have those, look around your home—what could you use to put your bone sections together so that they move, like joints? Try to engineer a solution.

**Read interactive e-Book on FOSSweb—FOSS Science Resources: *Structures of Life***

Login to FOSSweb, click on Structures of Life and go to the **Media Library**. Click on the eBook.

Use the Table of Contents to go to the article called “The Human Skeleton.”

Look at the pictures before reading the article. Think about what each page will be about.

Answer the following questions in your notebook:

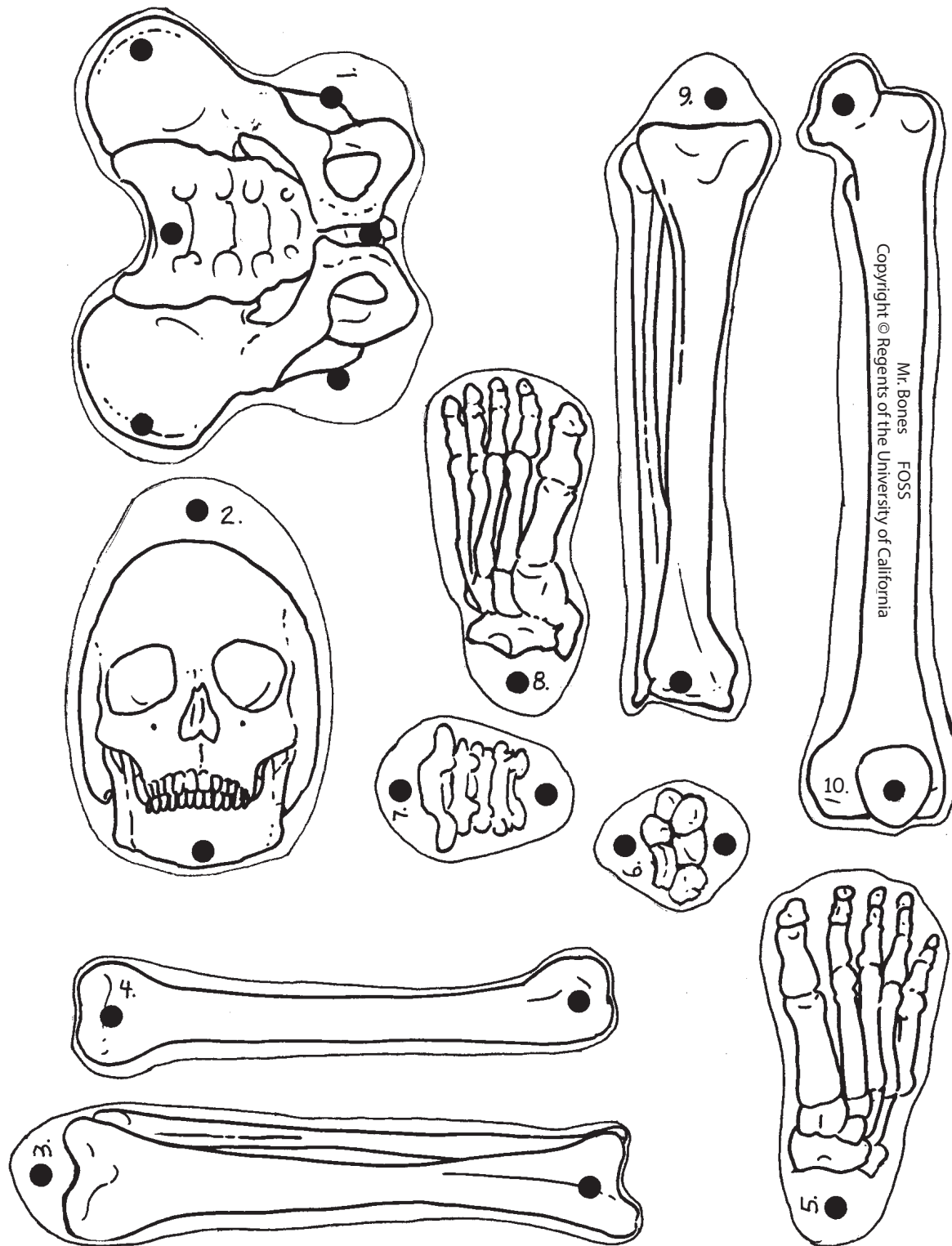
- Why are the skull, ribs, and pelvis called “superprotectors”?
- What did you learn about the skull, ribs, and pelvis from this article?
- Why are the spine, shoulder, and hip considered “flexible” bones?
- What are bones made of?
- How can you keep your bones strong and healthy?

In your notebook, respond to the focus question. You might want to start with this sentence starter:

I learned that the human skeleton \_\_\_\_\_.

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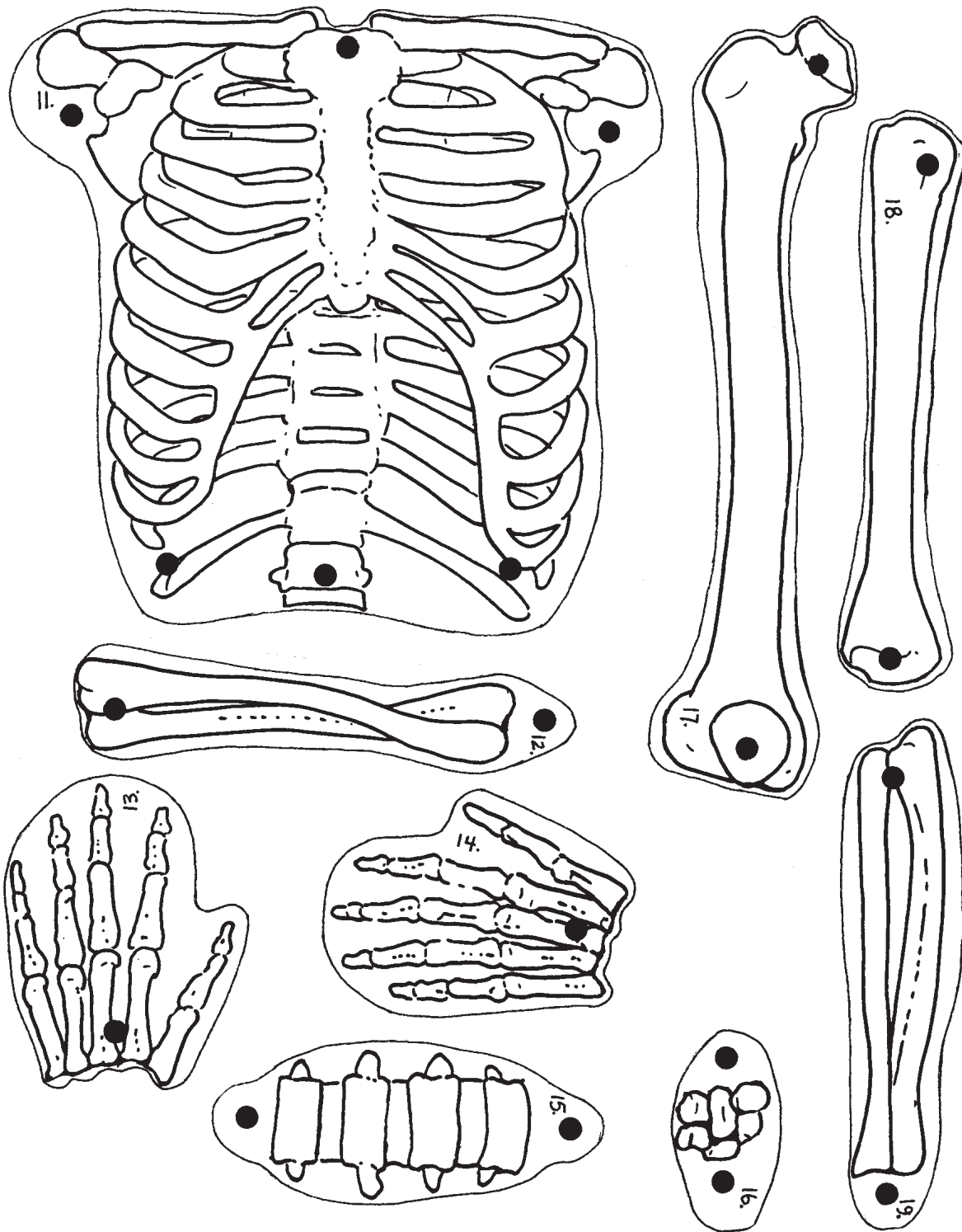
## MR. BONES A



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## MR. BONES B



# INV. 4 ACTIVITY—HUMAN BODY MEDIA RESOURCES

Recently you did some work thinking about human bones and the human skeleton. Today we will study a way to know about animals that lived on earth more than 10,000 years ago. Some of these animals can no longer be found on Earth.

**View the Streaming Video, *All about Fossils*.**

To access the Streaming Videos, login to FOSSweb, click on the Structures of Life Module, and go to the Media Library. Click on the Streaming Videos.

View the video *All about Fossils*.

Then answer the following questions in your notebook. Sentence starters have been provided to help if you would like to use them.

1. How are fossils made in the natural world? Fossils are made \_\_\_\_\_
2. How can paleontologists figure out how old fossils are? Paleontologists look at \_\_\_\_\_.
3. If you found a shell or fish fossil at the top of a mountain, what does that tell you?
4. A fish or shell fossil at the top of a mountain means that \_\_\_\_\_.
5. Did every ancient animal create a fossil? Why or why not? \_\_\_\_\_ every ancient animal \_\_\_\_\_ create a fossil because \_\_\_\_\_.
6. What can fossils tell us about life long ago? Fossils can tell us \_\_\_\_\_.

**Read the interactive e-Book on FOSSweb—FOSS Science Resources: *Structures of Life***

Login to FOSSweb, click on *Structures of Life* and go to the Media Library.

Click on the eBook.

Use the Table of Contents to go to the article called “Fossils.”

After reading the article, Consider if you want to add anything to your responses to the questions.

Also, read in the eBook “Skeletons on the Outside” and “Crayfish, Snails, and Humans.”

Record some key points about each article.

# INV. 4 ACTIVITY—THE HUMAN THUMB (PAGE 1 OF 2)

## Focus Question: What does your thumb help you to do?

Hold your hand up so you can see it well. Wiggle it while observing it. Touch the tip of your thumb to the tips of each of your other fingers. Have you ever thought about how incredible your thumbs are?

Humans are able to perform these movements because we have opposable thumbs. Your ability to do things and hold things firmly is one of the most important features of the human body. For this investigation you will need tape—any kind of tape will do, but masking tape is best.

Think about these questions and write a response in your notebook.

1. Each of your hands has 14 joints. Can you find them?
2. How is the thumb different from your other fingers?

Let's investigate. Read the list of tasks on the table below. Perform each task as you would normally do.

Now, ask a family member to tape your thumb to your index finger as shown (on one or both hands). Do the tasks again without the use of your thumb. Check the column that best describes how you felt doing the task the second time.



Task	Easier than with thumb	About the same	Harder than with thumb
Pick up something tiny.			
Hold a pencil.			
Draw a picture on the bottom of this page.			
Shade the picture you drew below.			
Trace the outline of this chart.			
Work a zipper.			
Fasten a button.			
Turn pages in a book.			
Put on a jacket or sweat shirt.			
Make up two additional tasks and record them below:			

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When done, remove the tape and then answer the following questions in your notebook

3. Which tasks were hard to do?
4. What made them hard?
5. What does an opposable thumb help you do?

### **Read the interactive e-Book on FOSSweb—FOSS Science Resources: *Structures of Life***

Login to FOSSweb, click on Structures of Life and go to the Media Library.

Click on the eBook. Use the Table of Contents to find the article called “Your Amazing Opposable Thumbs.”

Do a 3-2-1 in your notebook. List 3 things that opposable thumbs allow you to do. List 2 things that allow the thumb to work this way. List one thing you appreciate about your thumbs.