



## CHECK IT OUT

1

At this station are sponges, wooden spools, and pipe cleaners. You can use them to make your very own Sponge Spool Spine!

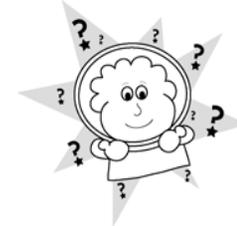
This is a model of what happens to your spine in space!



## WHAT TO DO

If the sponges are not already prepared, cut some to make 3 dime-sized pieces. Using the slightly sharpened pencil, poke a hole through the middle of the sponge pieces. Twirl the pencil around to make a bigger hole!

Take a pipe cleaner and make a small loop at one end. Cut another one in half to make legs and arms.



## WHAT TO ASK...

What happens to objects that are not being "held in place" by the force of gravity?

If your body was floating in space, what do you think would happen to the stuff *inside* your body... like your spine?



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2

You are creating a model of your spine. The sponges represent the discs in your spine. The wooden spools represent the bones - your vertebrae. Your discs are the cushions between your vertebrae.

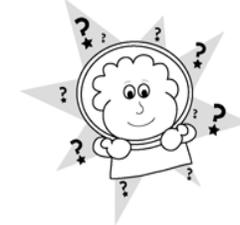


## WHAT TO DO

Push the pipe cleaner through the 3 sponge discs and 3 spools, alternating the discs and spools.

Wrap half a pipe cleaner above the discs and sponges to make arms. Make legs below the discs and sponges - *be sure to leave an inch or so of space between the arms and legs and the spine!*

If you want, add a sponge disc to the top of the pipe cleaner to form a head!



## WHAT TO ASK...

Did you know Earth's gravity pulls on your whole body? We are not aware of it, but that pull causes the softer discs between our vertebrae to compress.



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3

In microgravity, there is nothing to pull on us to compress our spines.

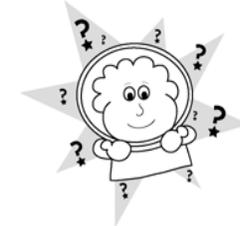
But our spines cannot completely pull apart because our body acts like a container and holds our bones and muscles and fluid together.



## WHAT TO DO

Measure the length of the sponge spine with a ruler and record your measurement (do *not* include the ends of the pipe cleaner in your measurement - only the spools and sponges).

Now gently lower the Sponge Spool Spine into the water and observe what happens.



## WHAT TO ASK...

What would happen if you were under water and let your body go limp? Would you float?

Do you think floating under water is a good model for floating in space?

What do you think the water in this container represents?



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4

Astronauts grow taller in space - sometimes as much as 2 inches!!

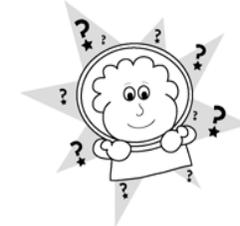
They also suffer from headaches, back aches, and dizziness at times because their tissue and nerves stretch.



## WHAT TO DO

Remove your Sponge Spool Spine from the water and measure his spine *now*.

What happened?



## WHAT TO ASK...

Did Sponge Bob's spine get *longer* when it was placed in microgravity (the water)?

If your Sponge Spool Spine has a head, did it swell?

How do you think you would feel if *your* body suddenly grew a couple of inches and your face and head puffed up?