



## Make a Galactic Mobile!

Make your own collection of beautiful galaxies. Suspend them on a mobile so they turn and sparkle in the wind.

### What you need:

- 12" (family size) or 7" (individual size) round cardboard from frozen pizza box. (Or cut circle from a cardboard box.)
- 4 large sheets (11" x 17") black construction paper
- Glitter—gold, silver, red, orange, yellow, blue, purple, or any other colors you like
- White glue
- Paintbrush, about 1/4 to 1/2 inch wide
- Scissors
- Thread (black is best) or fine nylon fishing line
- Small, 4-holed button
- Large, sturdy sewing needle
- 16 sequins or very small beads, black is best (optional)
- Tape measure or yard (meter) stick
- [Pattern for galaxies.](http://spaceplace.nasa.gov/review/galactic-mobile/galaxies.pdf) (<http://spaceplace.nasa.gov/review/galactic-mobile/galaxies.pdf>)



### First, make the galaxies:

1. Print out the patterns for the galaxies.
2. Cut the galaxy patterns apart on the dotted lines.
3. Use the patterns to cut each galaxy out of construction paper. If you are making a "family size" mobile, use all 12 galaxies. For an "individual size" mobile, use only 9 galaxies. Here's one way to cut out the galaxies:

First cut out a small square of construction paper a little larger than the pattern paper. Tape the edges of the pattern to the construction paper so it doesn't slip when you cut. Now, cut out the galaxy, cutting through both the pattern and the construction paper.



4. Now decorate the galaxies with glitter. Imagine each speck of glitter is a star!

Use the brush to spread the glue on one side of one galaxy. Sprinkle one or two colors of glitter on each. Remember, galaxies are brighter

Find this activity online and learn more about galaxies by visiting NASA's Space Place website: <http://spaceplace.nasa.gov/galactic-mobile>.

Find more fun activities at <http://spaceplace.nasa.gov/menu/do>.



in the center (where the stars are younger and hotter), becoming fainter at the edges or on the spiral arms.

5. When you have decorated one side, set the galaxy on something it won't stick to when the glue is dry! (Like a cookie sheet, for example.)
6. When you have decorated one side of each galaxy, let the glue dry. Then turn them over and decorate the other side. Be sure to leave them laying flat until the glue is completely dry. Otherwise, the spiral arms will droop. (If they do, when they are dry you can set a heavy book on them for a while.)

While you wait for the glue to dry . . .

### Make the frame for the mobile:

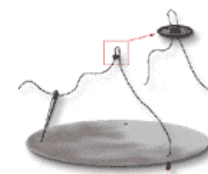
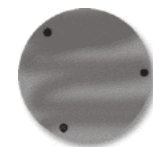
7. Use the round pizza cardboard as a pattern to draw a circle in the center of each of two pieces of construction paper. If the paper is big enough, cut the two paper circles a little larger than the cardboard.



8. Glue the paper circles to the top and bottom of the cardboard. If the paper circles are large enough, glue their edges together so the edge of the cardboard is also covered.

**Note:** Instead of covering the cardboard with paper, if you wish, you can paint both sides of the cardboard with flat black spray paint.

9. Make three pencil marks equally spaced around the edge of the circle, about 1 inch in from the edge.
10. Cut a length of thread about 2 feet long. Thread the needle, and either tie a fat knot in the end or tie a sequin or small bead to the end (include only one strand of thread).
11. Poke the needle through one of the pencil marks on the edge of the cardboard circle. Pull the thread through to the knot, sequin, or bead.
12. Take the 4-holed button and poke the needle up through one hole in the button and down through another.
13. Now poke the needle back down through another pencil mark on the circle (since the mark will be on the wrong side of the circle, you'll have to poke the needle up the other way first just to mark the hole).



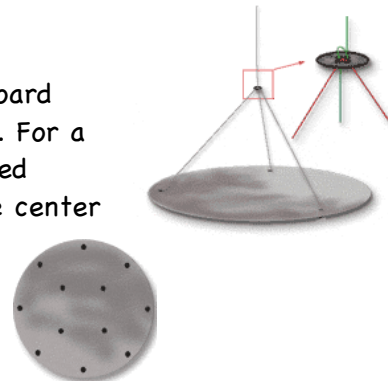


14. Unthread the needle and tie a fat knot, sequin, or bead in the end of the thread.
15. Now, cut a length of thread about 3 feet long and rethread the needle. Again, tie a fat knot, sequin, or bead in the end. Poke the needle up through the remaining pencil mark on the circle. (Knots, sequins, or beads should all be on the same side.)

Poke the needle up through one of the remaining holes in the button and then down through the last hole. Unthread the needle and tie a loop in the end of the thread for hanging the mobile from the ceiling.

### Hang the galaxies from the mobile frame:

16. Make pencil marks on the bottom of the cardboard circle where you will be attaching each galaxy. For a 12-inch mobile, you could put eight evenly spaced around the edges and four evenly spaced in the center area. For a smaller mobile, you could put six around the edges and three in the center.



### For each galaxy:

17. Cut a length of thread and thread the needle. Tie a knot, sequin, or bead to the end. Draw the needle through the center of the galaxy. Now poke the needle through one of the marks on the circle. Adjust the length of the thread so the galaxy hangs nicely, then cut the thread and tie a knot, sequin, or bead in the end.
18. Make the galaxies hang at different levels, so they can turn freely without hitting each other.
19. Hang your Galactic Mobile from the ceiling. Notice that you can adjust the thread going through the button to make the circle hang level.
20. Listen to the "Oh's" and "Ah's."

