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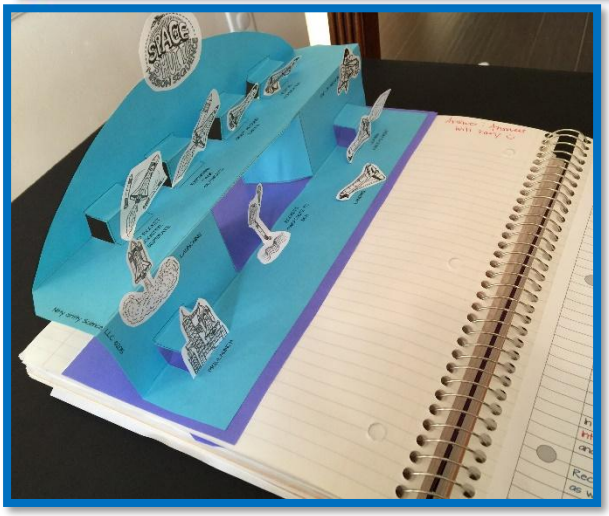
Section 6: Space Exploration



Description:

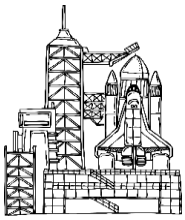
We're bringing Science Interactive Notebooks to a whole new level with this pop-up model of a Space Shuttle Mission Sequence. Using the visual directions, students will have so much fun determining the order of the space mission, but then will take their engagement to a whole new level when their page "pops-out" at them.

Printables, cut-outs, visual directions, a teacher answer key and a mini-quiz are all included for this concept.

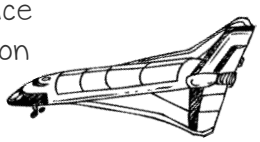
Space Shuttle Mission Sequence

Introduction: Sending humans into space was a major goal of the early space program. In 1962, NASA sent the first American astronaut, John Glenn, into space from Cape Canaveral at the Kennedy Space Center in Florida, and since then, all crewed spaceflights in the United States have been launched from there.

In order for a space shuttle to have a successful mission, the shuttle must launch during a specific window of time, orbit the Earth to complete its mission, and then return to Earth, landing much like an airplane.

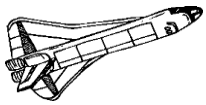


Landing

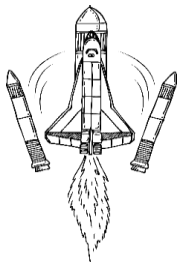


Directions: This activity features different steps of a mission sequence. Unfortunately, they are all mixed up, and your help is needed to place them in the correct sequence on the pop-out space shuttle mission sequence model. Follow these steps to complete the model:

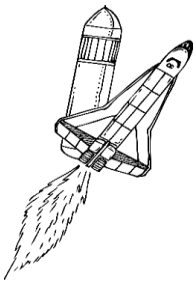
1. First, fold your pop-out model base page into thirds lengthwise following the guidelines given on the sheet. The folded paper should look like an ascending staircase.

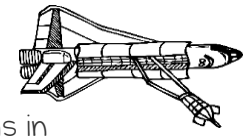


2. Carefully, cut all dashed lines on the sheet. The cut lines on the outside of the page will create 3D boxes that will come forward on your model. The cut lines in the middle of the page will create "doors" that you will open to help your model stand to showcase the sequence.

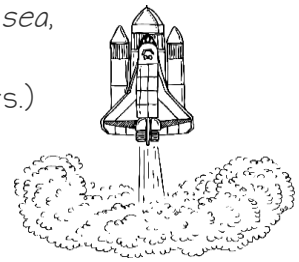


3. Next, cut out all diagrams of the sequence on the outside of this page – notice that the beginning (prelaunch) and end (landing) diagrams have been identified for you. Use the descriptions on your model to help you place the rest of the sequence in order.

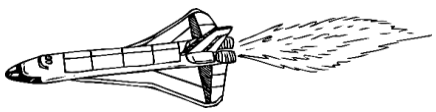


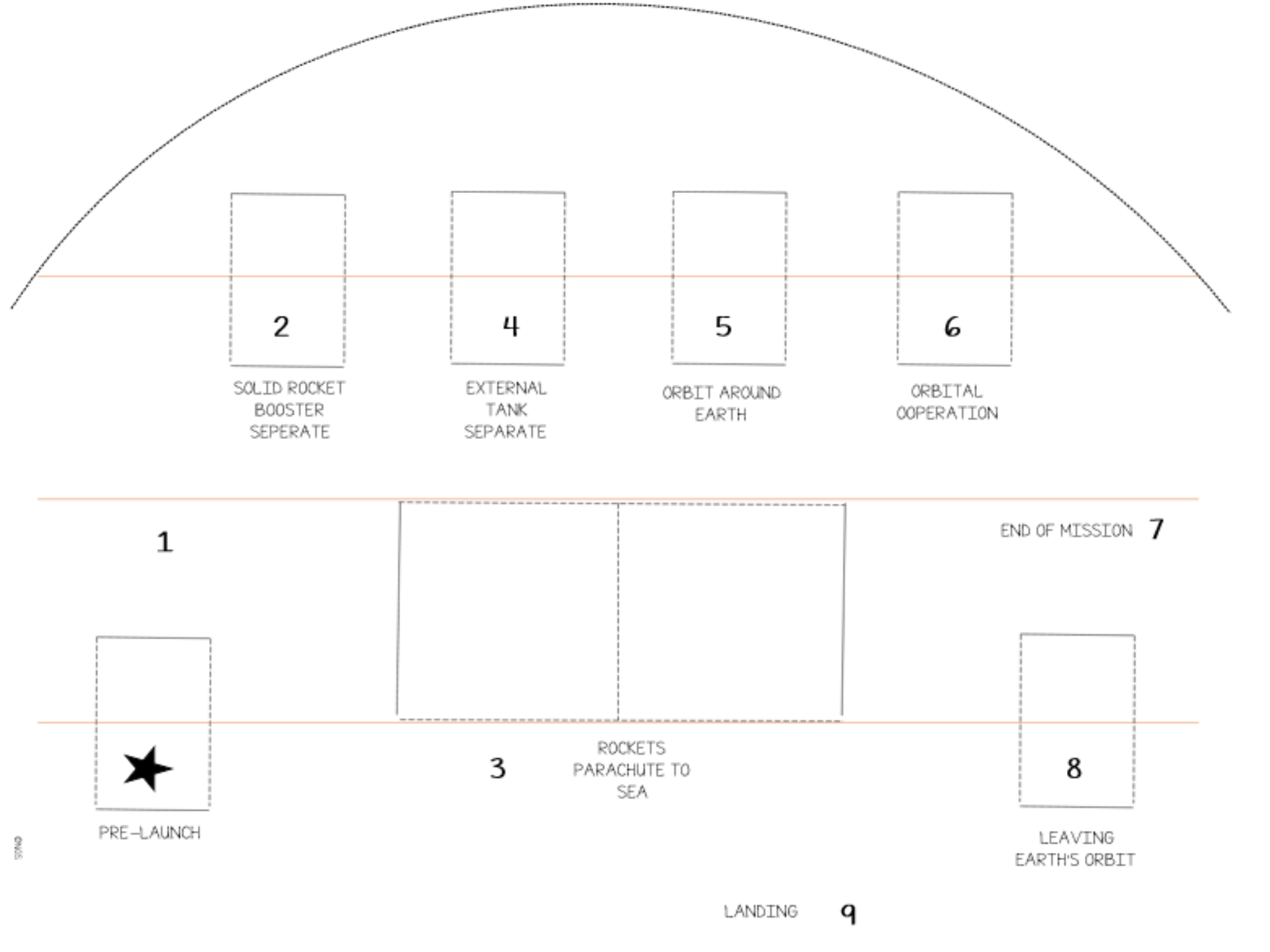


4. When you have the sequence in the correct order, glue all diagrams in the correct order on the model. All diagrams on this page are in the correct orientation – make sure to take notice before gluing. To help create the 3D effect, ONLY glue the BOTTOM half of each diagram on the numbered position. This will allow for more of a "pop-out" feature on your model. (*Hint, the step where the *rockets parachute to sea*, fold so that you glue the water to the page, and the rest of the diagram stands up in front of the space created by the cut doors.)



5. When complete, paste the bottom tier of the model into your Science Interactive notebook and fold flat when not in use.



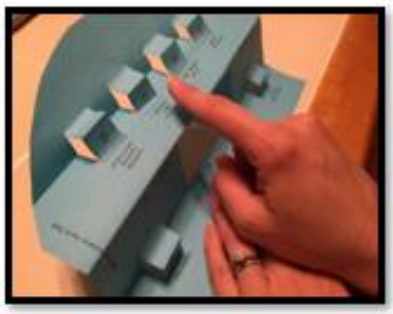

2
SOLID ROCKET BOOSTER SEPERATE
4
EXTERNAL TANK SEPARATE
5
ORBIT AROUND EARTH
6
ORBITAL OOPERATION
1
END OF MISSION 7
PRE-LAUNCH
3
ROCKETS PARACHUTE TO SEA
8
LEAVING EARTH'S ORBIT
LANDING 9

Visual Directions for Space Shuttle Mission Sequence Model

1. First, fold your pop-out model base page into thirds lengthwise following guidelines given on sheet. The folded paper should look like an ascending staircase.

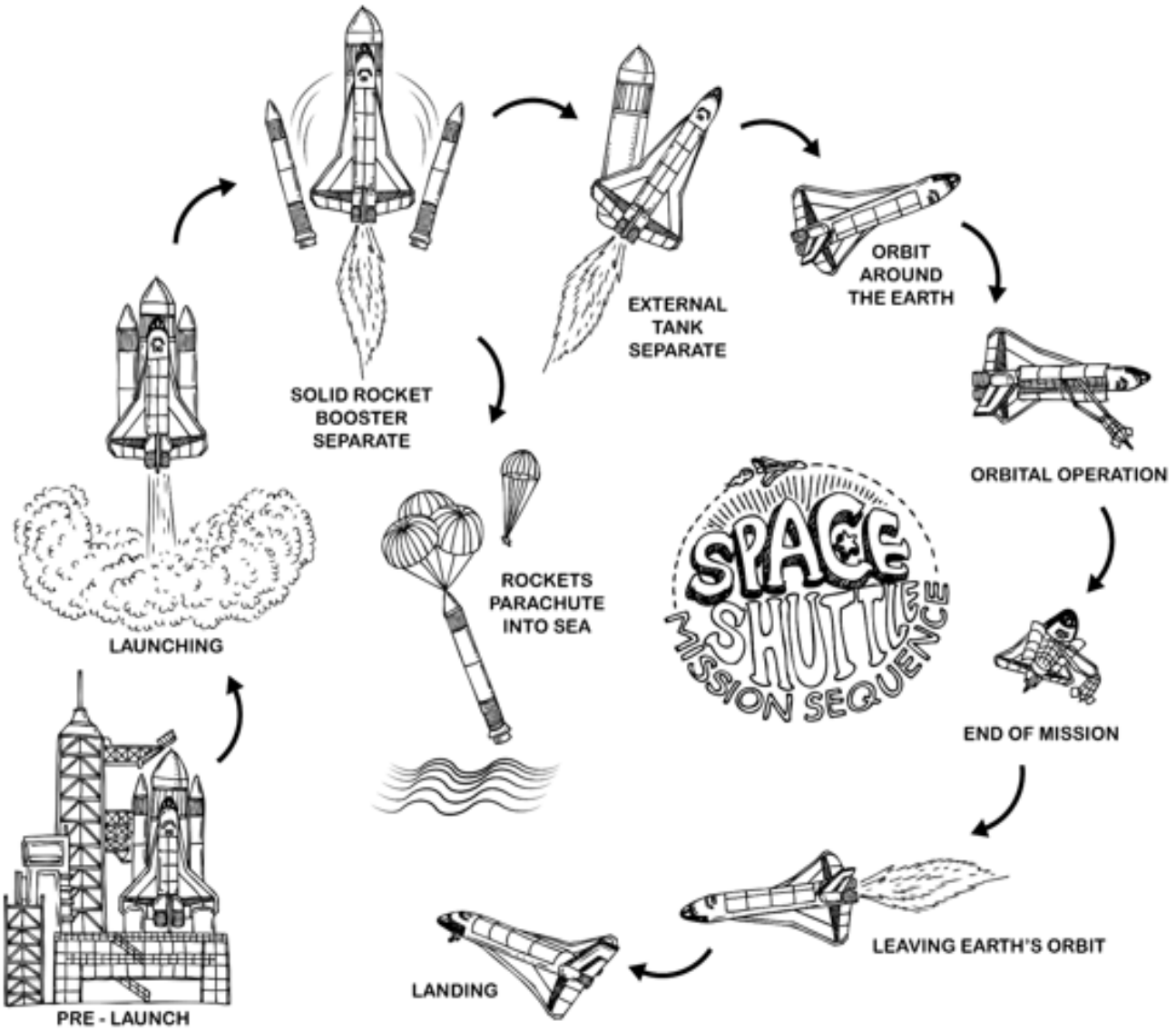
2. Carefully, cut all dashed lines on the sheet. The cut lines on outside of page will create 3D boxes that will come forward on your model. The cut lines in the middle of the page will create "doors" that you will open to help your model stand to showcase the sequence.

3. Next, cut out all diagrams of the sequence on the outside of the page. Notice the beginning ★ (prelaunch) and end (landing) diagrams have been identified for you. Use the descriptions on your model to help you place the rest of the sequence in order.



4. When complete, paste the bottom tier of model into your Science Interactive Notebook and fold flat when not in use.

Answer Key



Name _____ Date _____

Quiz: Space Exploration

Using the diagram, explain what is happening at the following steps.

1. Step 3A: _____

_____

2. Step 4: _____

_____

3. Step 6: _____

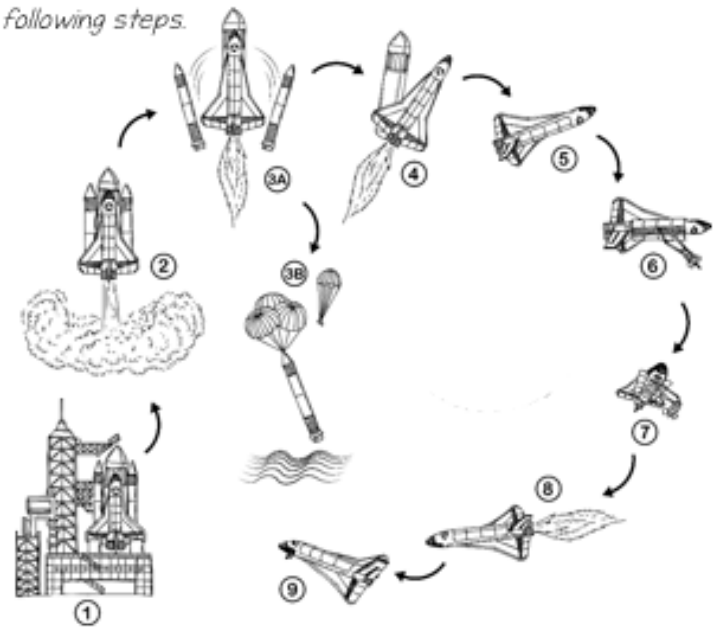
_____

4. Step 8: _____

_____

5. Step 9: _____

_____



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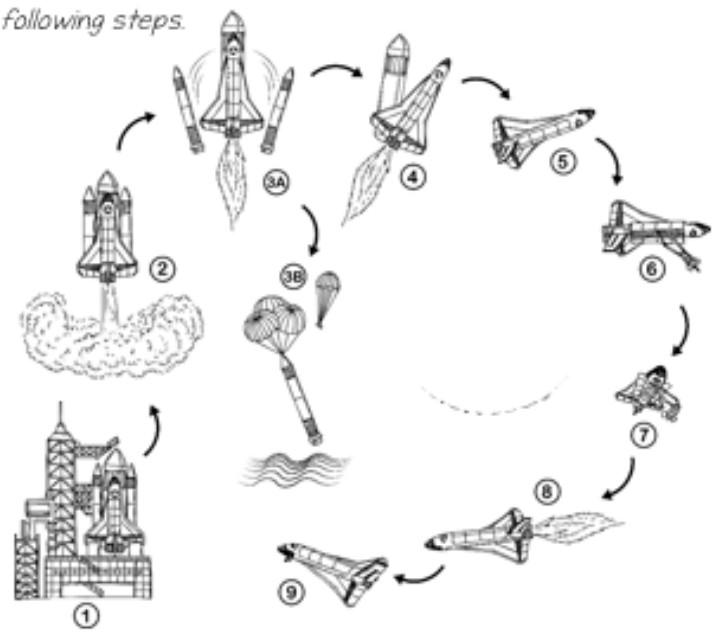

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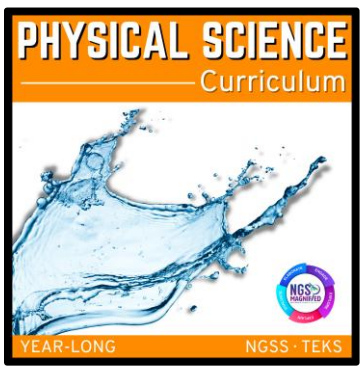
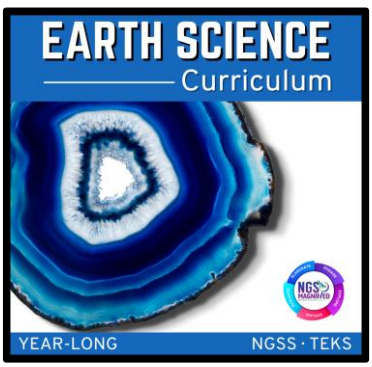
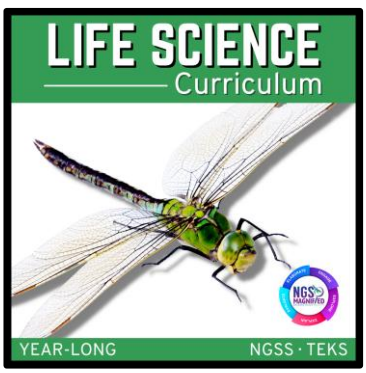


Earth Science



Life Science



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