

overview



THE SPACE SHUTTLE WAS DESIGNED TO CARRY PAYLOADS TO AND FROM SPACE AND TO BE REUSABLE. IT IS LAUNCHED LIKE A ROCKET AND GLIDES IN AND LANDS ON A RUNWAY LIKE AN AIRPLANE. IT IS THE SIZE OF A DC-9 AIRPLANE AND HAS PARTS JUST LIKE AN AIRPLANE. THE ORBITER USES ELEVATORS, AILERONS, AND A RUDDER TO HELP STEER IT ON LANDINGS. TO HELP IT LAUNCH INTO SPACE, THERE ARE TWO SOLID ROCKET BOOSTERS THAT HELP LIFT IT THROUGH EARTH'S THICKEST PART OF THE ATMOSPHERE. THE ORBITER HAS THREE MAIN ENGINES THAT GIVE IT THRUST FROM LIFTOFF TO ORBIT. THE ENGINES GET THEIR FUEL FROM THE EXTERNAL TANK, THE ORANGE CYLINDER UNDERNEATH THE ORBITER. IN THIS ACTIVITY, STUDENTS MAKE A SIMPLE MODEL OF A "SHUTTLE CRUISER" THAT CAN TRAVEL BETWEEN SPACE STATIONS. STUDENTS CAN COPY THE PRESENT DAY SPACE SHUTTLE OR MODIFY THE DESIGN TO SHOW A SHUTTLE THAT TRAVELS TO AND FROM OTHER SPACE STATIONS.

materials

- *CARDBOARD*
- *CONSTRUCTION PAPER*
- *TOILET PAPER TUBE*
- *STRAWS*
- *GLUE*
- *SCISSORS*
- *TAPE*
- *PAINTS AND PAINTBRUSHES*
- *SMALL SHARP KNIFE*

procedures

1. WRAP THE TOILET PAPER TUBE WITH WHITE CONSTRUCTION PAPER AND GLUE IN PLACE.
2. CUT A STRAW IN HALF AND SET ASIDE. CUT TWO STRAWS THE LENGTH OF THE TOILET PAPER TUBE. SET ASIDE.
3. PLACE THE WRAPPED TOILET PAPER TUBE ON A PIECE OF CARDBOARD TO DRAW THE WINGS. CUT OUT THE WINGS.

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4. CUT THE TAIL OUT OF CARDBOARD.
5. SLIT THE TOILET PAPER TUBE THE LENGTH OF THE TAIL USING A SHARP KNIFE (TEACHER WILL NEED TO DO THIS). SLIP THE TAIL INTO THE CUT AND TAPE ON THE INSIDE.
6. CUT THE NOSE CONE FROM CONSTRUCTION PAPER. BE SURE TO FIT IT PROPERLY AND GLUE IT INTO PLACE. USE THE PAINTBRUSH TO APPLY GLUE AROUND THE EDGE OF THE TUBE AND THE CONE. STUDENTS MAY HAVE A DIFFICULT TIME WITH THIS STEP. MONITOR THEM CLOSELY AND ALLOW THOSE STUDENTS THAT MASTERED THE TECHNIQUE TO HELP OTHERS. LET A LITTLE TIME PASS TO ALLOW THE GLUE TO SET BEFORE GOING ONTO THE NEXT STEP.
7. GLUE THE TWO SMALL STRAWS ON THE WING ON EACH SIDE OF THE TUBE.
8. GLUE THE ENTIRE STRUCTURE ON TOP OF THE TWO LARGER STRAWS.
9. PAINT AND ADD DETAILS.

