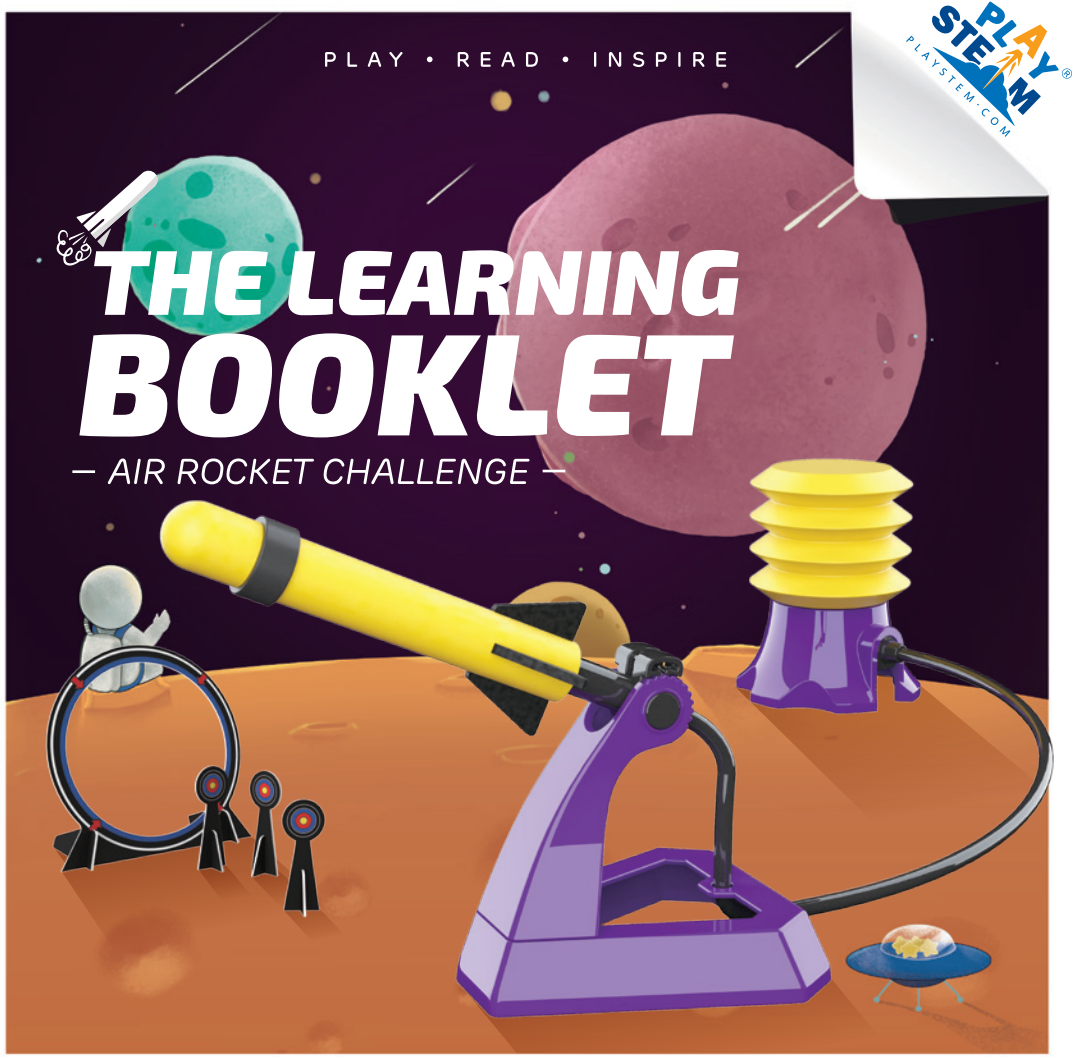
PLAY • READ • INSPIRE

THE LEARNING BOOKLET

— AIR ROCKET CHALLENGE —



WEBSITE: WWW.PLAYSTEM.COM **EMAIL:** INFO@PLAYSTEM.COM **ADDRESS:** SUITE 35 - 36 THE DESIGNWORKS, PARK PARADE, LONDON, NW10 4HT. MANUFACTURED BY HANGZHOU ZT MODEL COMPANY LIMITED. ADDRESS: NO 6 MINGDE RD., PUYAN, BINJIANG, HANGZHOU, CHINA.

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TABLE OF CONTENTS

⚠ WARNING MESSAGE

GENERAL WARNING ⚠

Before you begin, please read through the instructions together with your children. Make sure you understand the safety messages. Please keep the packaging and instructions, as they contain important information.

CHOKING HAZARD - Small parts, not for children under 3 years.

Children should have parental supervision when assembling the product.

Please clean the product with a clean cloth when necessary.

WARNING: Do not aim at eyes or face.
WARNING: Do not discharge an object other than the projectile provided with this toy.

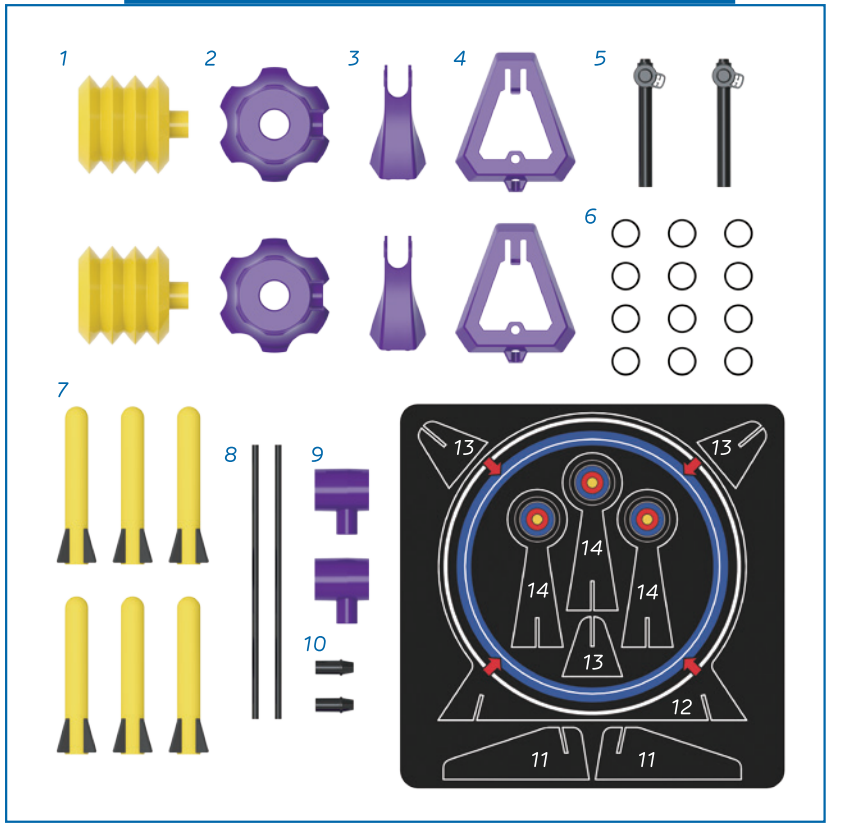
1 WARNING MESSAGE

Read to be inspired!

PLAY STEAM®

2 PACKAGE CONTENTS

Package Contents



Serial	Name	Quantity	Serial	Name	Quantity
1	Inflator	2	8	Air hose	2
2	Inflator base	2	9	Air valve	2
3	Pipe stand	2	10	Nozzle	2
4	Launch pad	2	11	Big target base	2
5	Air pipe	2	12	Big target ring	1
6	Balance rings	12	13	Small target base	3
7	Rocket	6	14	Small target face	3

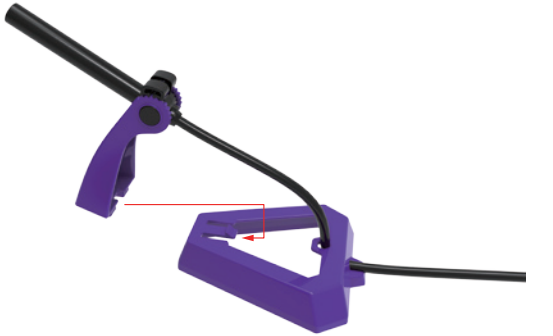
3 | INSTALLATION

1 Twist and insert the hose into the air pipe.
Insert the hose into the air pipe.

2 Snap the air pipe onto the pipe stand.

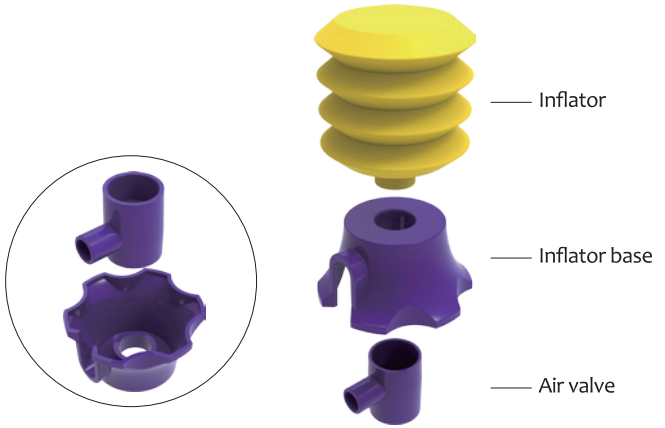
3 Insert the air pipe through the upper and lower holes of the launch pad in sequence.

4 Attach the launch pad bracket to the launch pad.



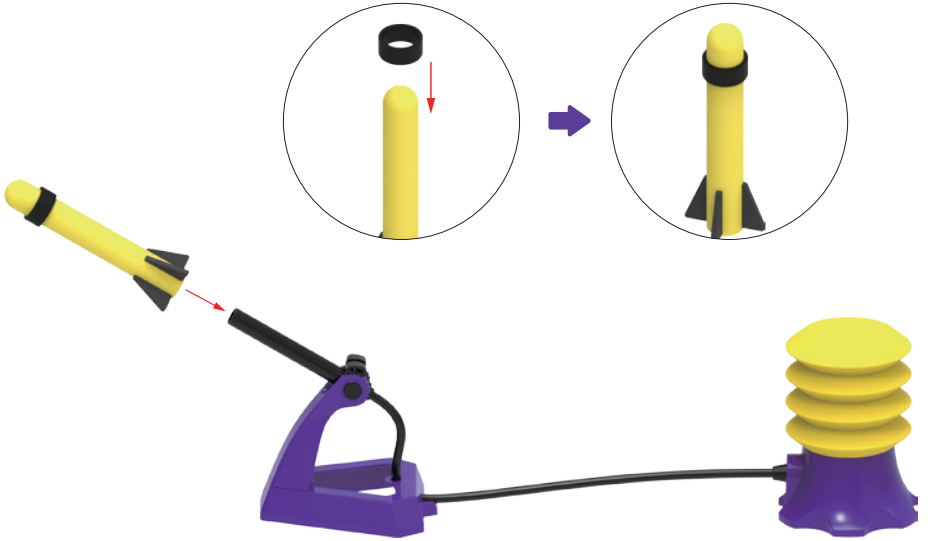
5 Twist and insert the air pipe in the air nozzle according to the figure.

6 Connect the inflator and the air valve to the inflator base according to the figure.

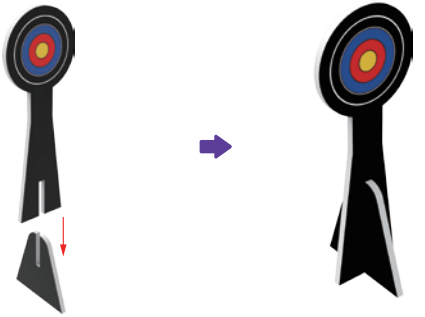


7 Connect the air nozzle to the air valve.

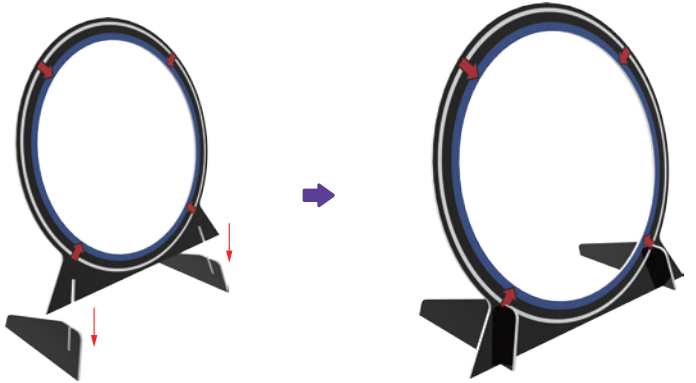
8 Insert the rocket into the balance ring, then slide the rocket over the pipe.



9 Assemble small targets.

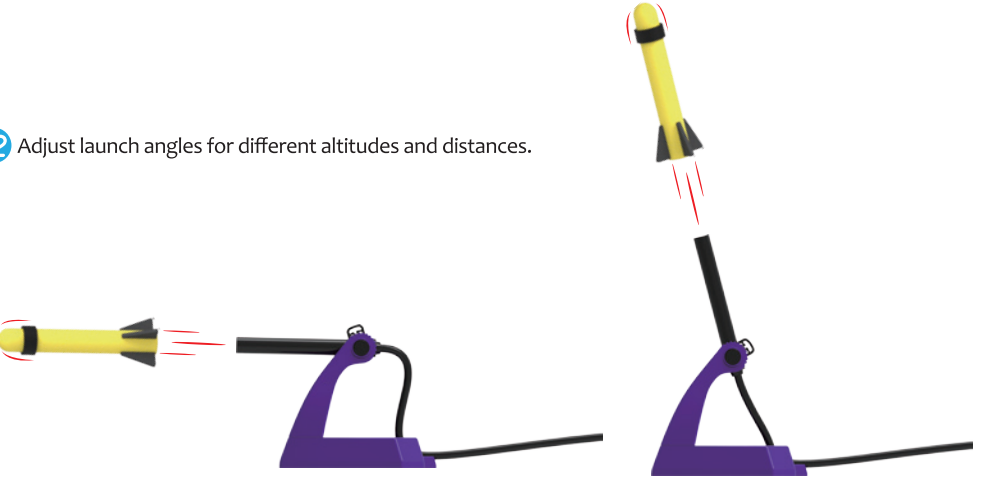


10 Assemble big target base.



11 Press the inflator to launch your air rocket towards the targets.

12 Adjust launch angles for different altitudes and distances.

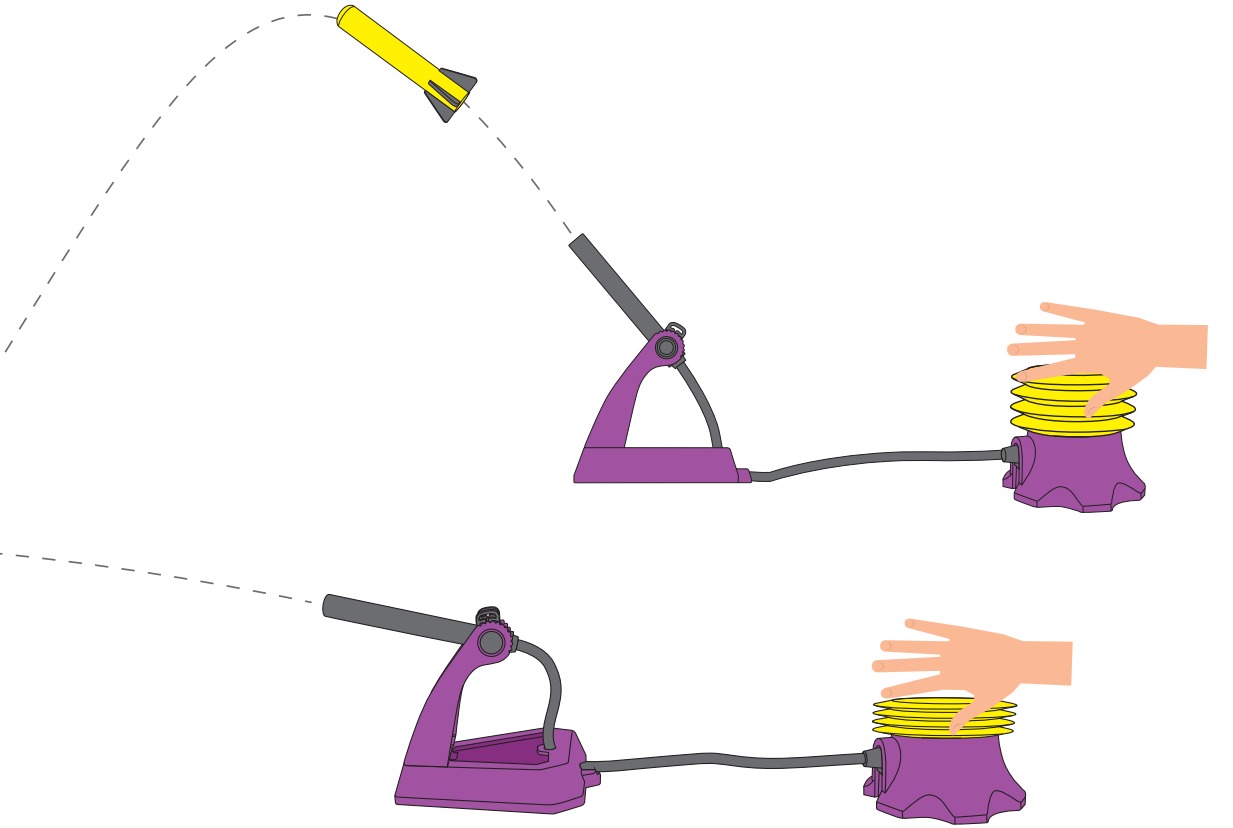


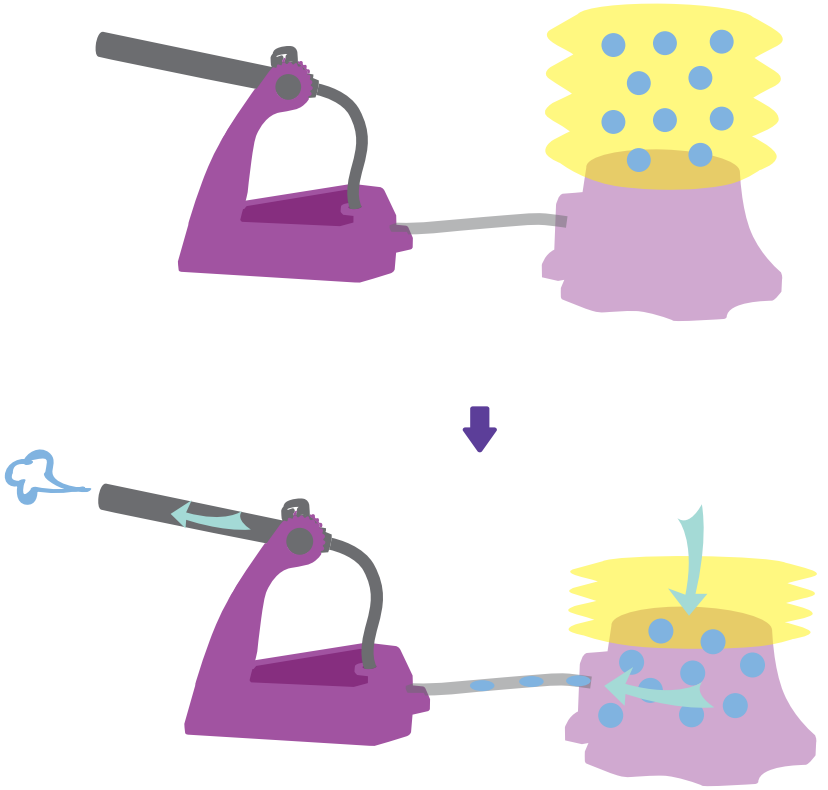
4 | FUN FACTS

WHAT DOES IT DO?

Learn about air pressure with the Table Top Air Rocket. It is a perfect aerospace science activity suitable for indoors and outdoors.

Press sharply on the pump and watch the rocket fly. Depending on the force you apply, it will fly at a range of different heights and speeds.
You can change the flying angle by adjusting the launching platform.





HOW DOES IT WORK?

When you press the pump, air inside the pipe is compressed and transmitted to the bottom of the rocket. The air pressure suddenly produced is a form of energy that will be used to launch and propel the rocket.

Try pushing the pump harder to see what happens. You will find that the rocket flies faster and higher.
This is because the harder you press the pump, the more suddenly the air is released, creating higher air pressure and providing more energy to launch the rocket.
Try to adjust the angle and the force applied to the pump to launch the rocket.

Read to be inspired!

The first artificial satellite in space was Sputnik I, launched by a fuel-powered rocket by the USSR in 1957.

Read to be inspired!

You may have heard of a company called SpaceX®. The California-based aerospace company is working on rockets that can be used multiple times, which will make space travel much easier and more efficient.

5 | ACTIVITIES

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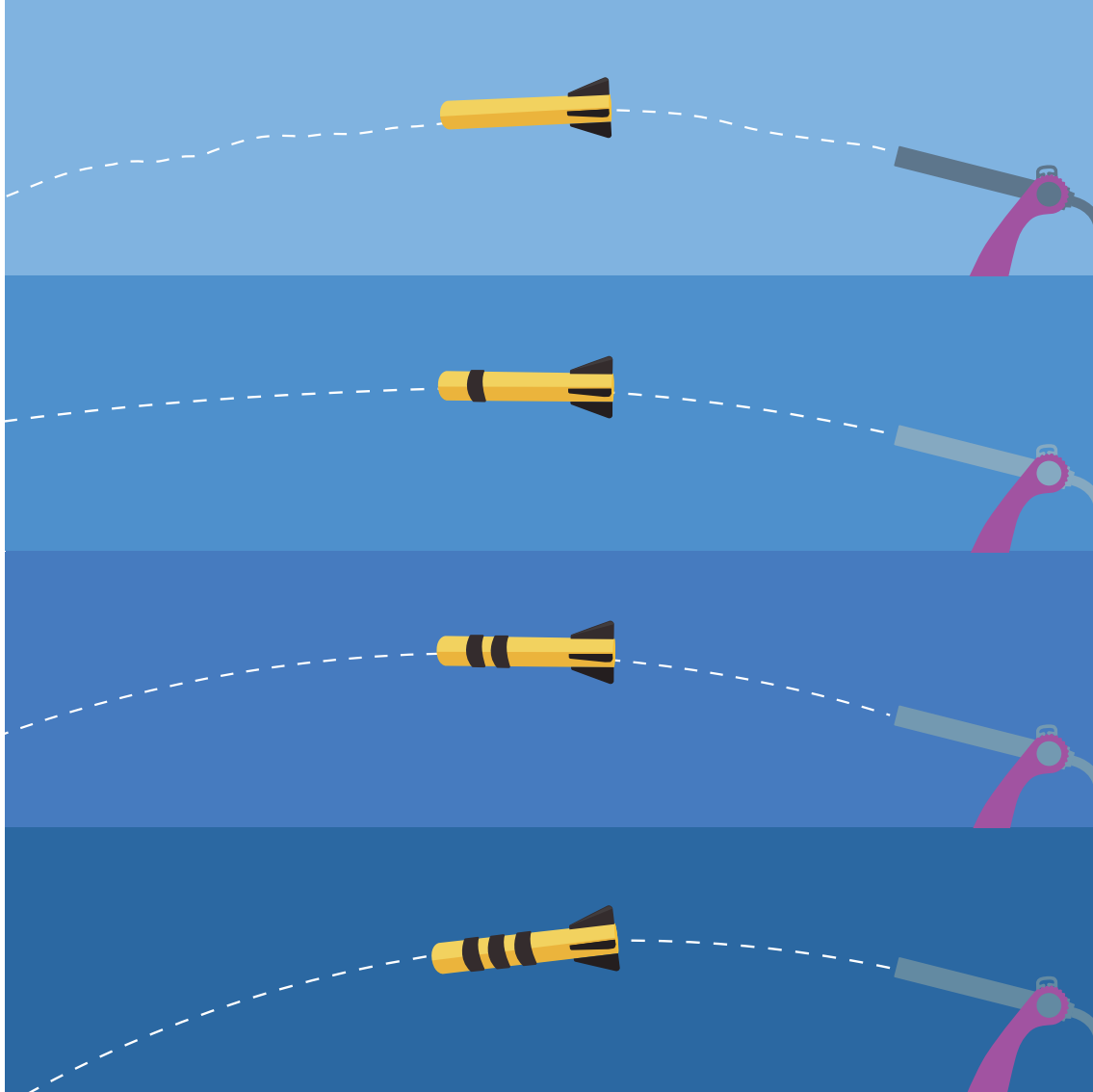
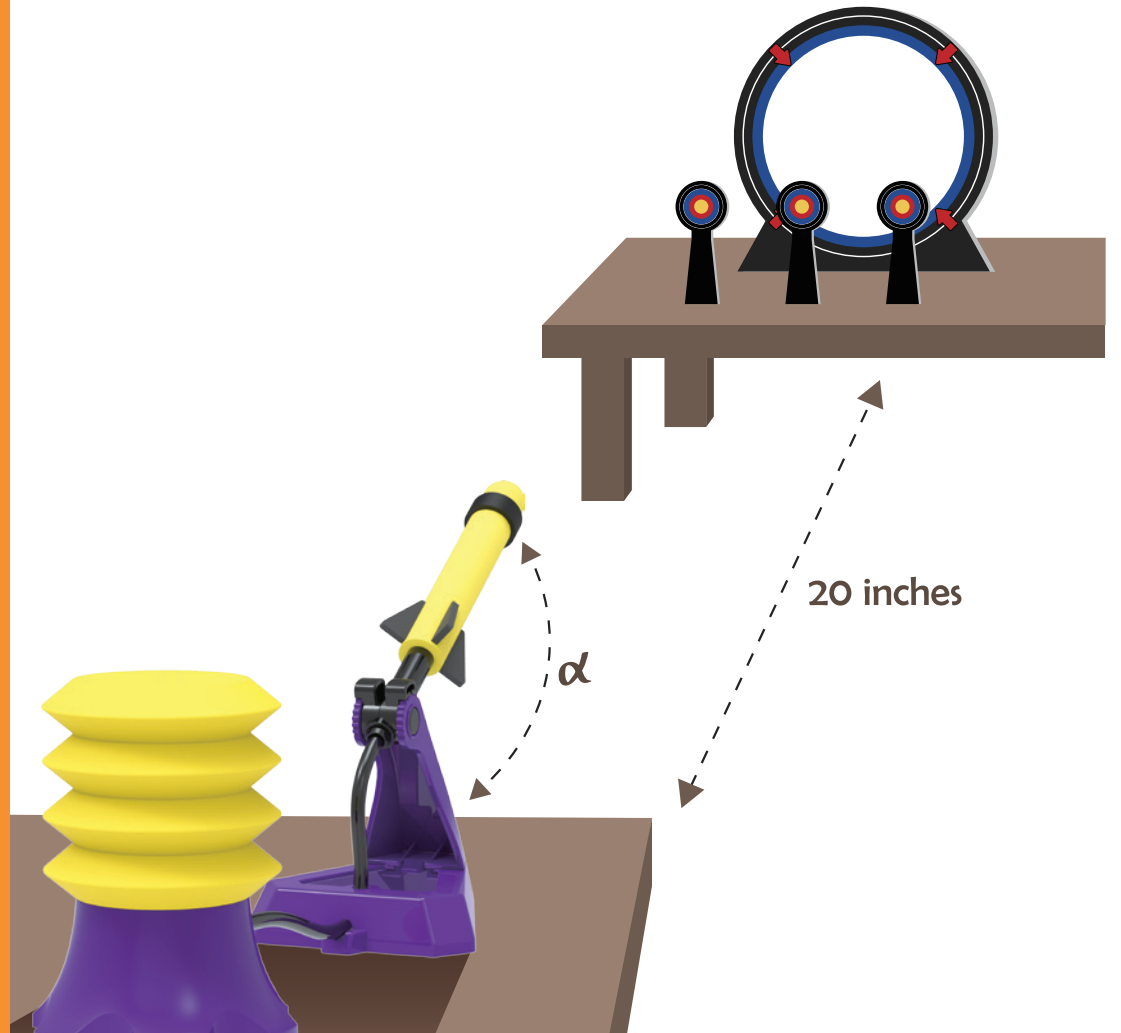
Balance your rocket

The rockets as they are in the package are quite light. When fired, they don't follow a straight trajectory but seem to randomly turn and glide in the air. To make a rocket more stable, you can add some balance rings as illustrated. It will make it heavier and more stable. You can add one, two or more balance rings, to make it even more stable. However, if you add too many of them, the rocket will become too heavy and won't fly properly. Try it and find the best compromise.





Shoot the target

Once you find a good compromise between the weight and the stability of the rocket, you can try shooting at the targets. There are two types of targets. There is one big circle and three little ones. Place them on a flat surface, and place your rocket launcher about 20 inches from the targets. Try shooting a few time and then adjust the launch angle to reach the targets. Then move the target further away to see how you have to readjust the launch angle. Make a table and write down the correct launch angle for every distance.

Play with your friends

To compete with your friends, each player takes one or more rockets (depending on the number of players) and adjust the weights as per his own assessment. The heavier it is the more stable, the lighter it is the faster. Place the targets on a flat surface and place the rocket launcher at a certain distance from them. Then, shoot at the targets in turn and write down the scores.