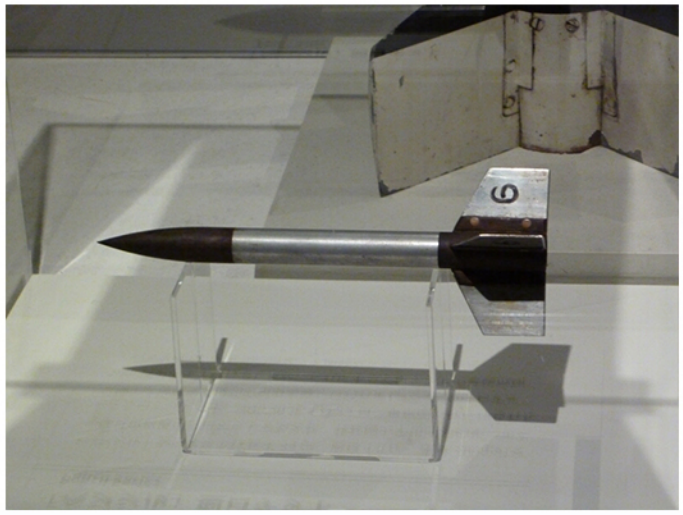
Pencil Rocket

1/1 scale paper model



Developed by Professor Hideo Itokawa of University of Tokyo in 1955.

It was small, a little over 9" tall and less than 3/4" in diameter.

The Pencil was made out of metals, such as aluminum, and used a solid fuel that ran almost the entire length of the body tube. This fuel was a based on a smokeless charge, a combination of nitroglycerin and nitrocellulose. As a result, it was a bit more powerful than your stock model rocket.

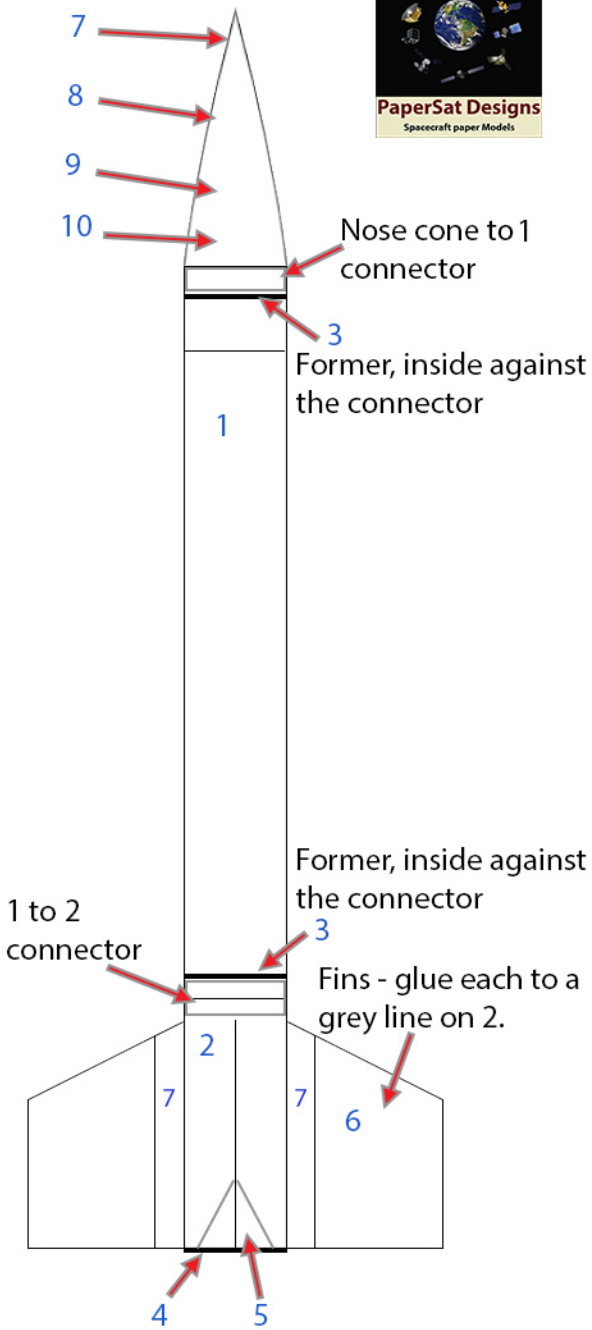
When it was initially tested, it was somewhat captive, "flying" along a line and through a series of barriers that allowed Itokawa and his team of researchers to measure its speed and thrust.
More tests were conducted, and eventually three different versions of the Pencil would be developed; a longer version, named "Pencil 300", so called for its length of 300mm (almost 12"), and a two stage version.

It was the first project of a modern rocket in Japan after World War II.

His new rocket after Pencil is called “Baby”, the second generation of sounding rockets of Japan. This will lead to a third generation of sounding rockets, “Kappa” when lead to the “Lambda” rocket that place Japan’s first satellite (Ohsumi) to space in February 11, 1970.

All this started by a very small rocket called Pencil.

Professor Itokawa's team would form the core of what would be the Institute of Space and Astronautical Science, which is now a part of JAXA, the Japanese Aerospace Exploration Agency.



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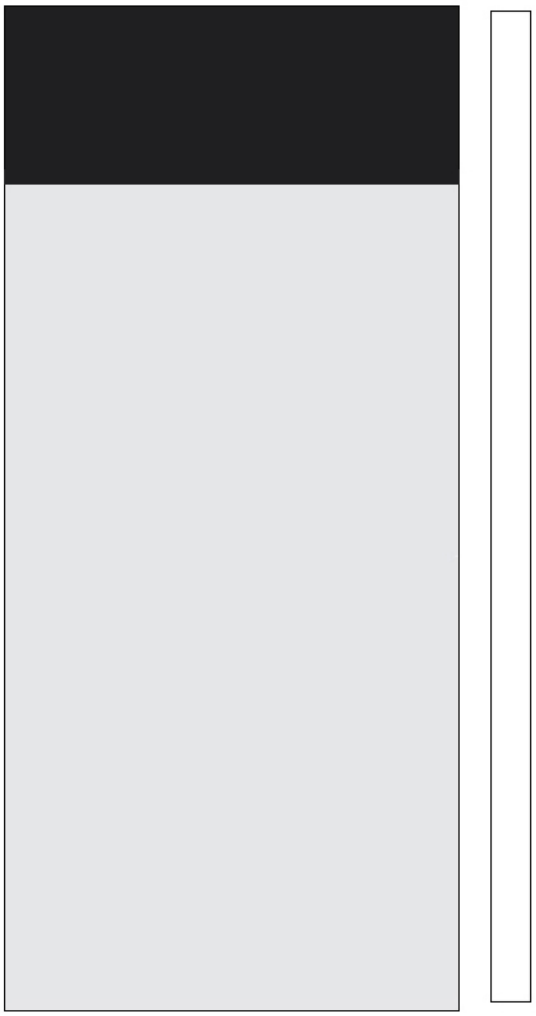
1



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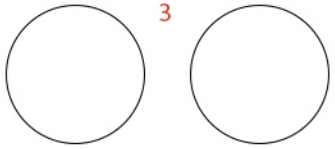
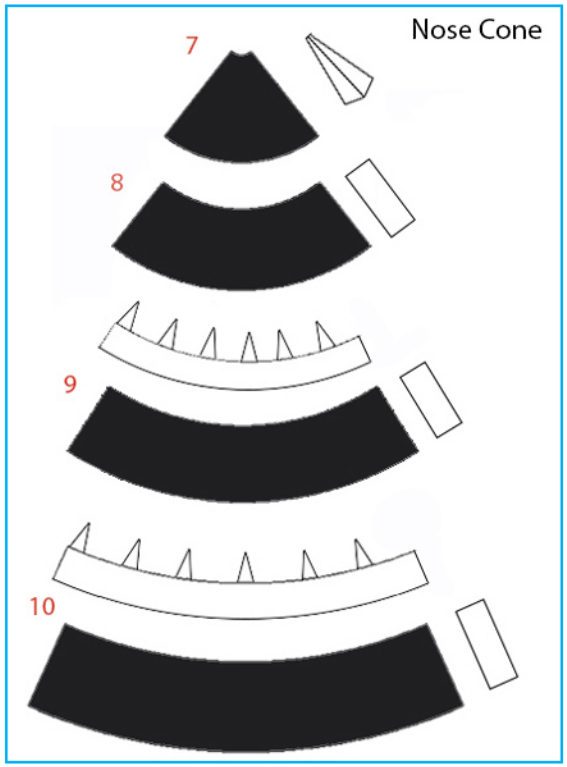
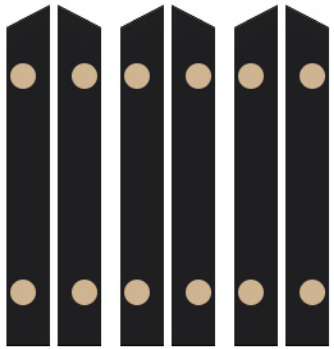


3

Formers, glue to cardstock





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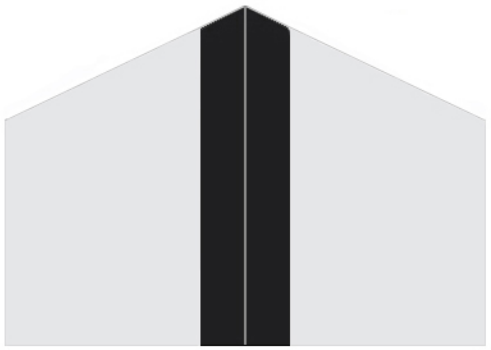

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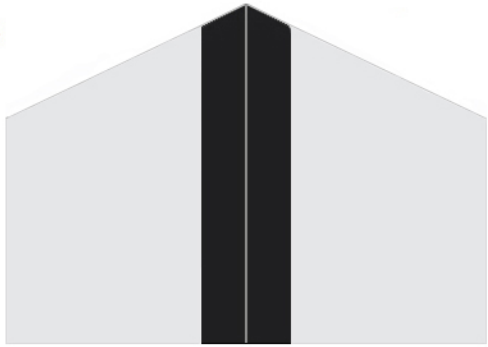

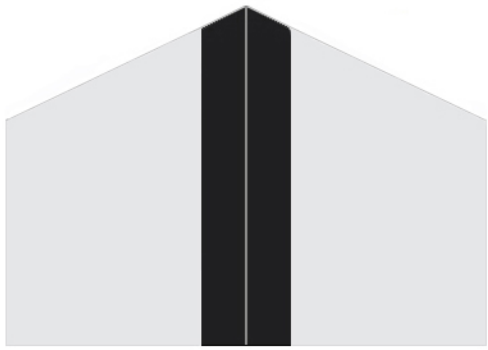

4

5

Color back Black

Cut out the light blue circle from 4.
roll 5 to a cone, glue to backside of 4 for embedded nozzle.
glue up under the rocket.