

Cassini Spacecraft



The Cassini–Huygens space-research mission commonly called Cassini, involved a collaboration between NASA, the European Space Agency (ESA), and the Italian Space Agency (ASI) to send a space probe to study the planet Saturn and its system, including its rings and natural satellites. The Flagship-class robotic spacecraft comprised both NASA's Cassini space probe and ESA's Huygens lander, which landed on Saturn's largest moon, Titan. Cassini was the fourth space probe to visit Saturn and the first to enter its orbit. The two craft took their names from the astronomers Giovanni Cassini and Christiaan Huygens.

Launched aboard a Titan IVB/Centaur on October 15, 1997, Cassini was active in space for nearly 20 years, with 13 years spent orbiting Saturn and studying the planet and its system after entering orbit on July 1, 2004. The voyage to Saturn included flybys of Venus (April 1998 and July 1999), Earth (August 1999), the asteroid 2685 Masursky, and Jupiter (December 2000). The mission ended on September 15, 2017, when Cassini's trajectory took it into Saturn's upper atmosphere and it burned up in order to prevent any risk of contaminating Saturn's moons, which might have offered habitable environments to stowaway terrestrial microbes on the spacecraft. The mission was successful beyond expectations. Cassini has revolutionized human understanding of the Saturn system, including its moons and rings, and our understanding of where life might be found in the Solar System.

The Huygens module traveled with Cassini until its separation from the probe on December 25, 2004; Huygens landed by parachute on Titan on January 14, 2005. It returned data to Earth for around 90 minutes, using the orbiter as a relay.

This was the first landing ever accomplished in the outer Solar System and the first landing on a moon other than Earth's Moon.

At the end of its mission, the Cassini spacecraft executed its "Grand Finale": a number of risky passes through the gaps between Saturn and Saturn's inner rings. This phase aimed to maximize Cassini's scientific outcome before the spacecraft was disposed. The atmospheric entry of Cassini ended the mission, but analysis of the returned data will continue for many years.

The Cassini-Huygens spacecraft was one of the largest, heaviest and most complex interplanetary spacecraft ever built, weighing in at 5.6 tonnes and measuring 6.7 m high and more than 4 m wide.

In September 2018, NASA won an Emmy Award for Outstanding Original Interactive Program for its presentation of the Cassini mission's Grand Finale at Saturn. In January 2019, new research using data collected during Cassini's Grand Finale phase was published:

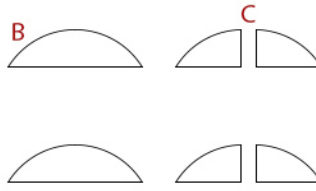
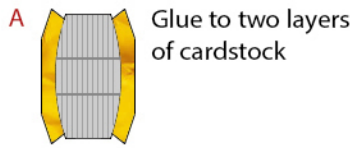
- ☒ The final close passes by the rings and planet enabled scientists to measure the length of a day on Saturn: 10 hours, 33 minutes and 38 seconds.
- ☒ Saturn's rings are relatively new, 10 to 100 million years old. They may have formed during the age of dinosaurs on Earth.

Zach's

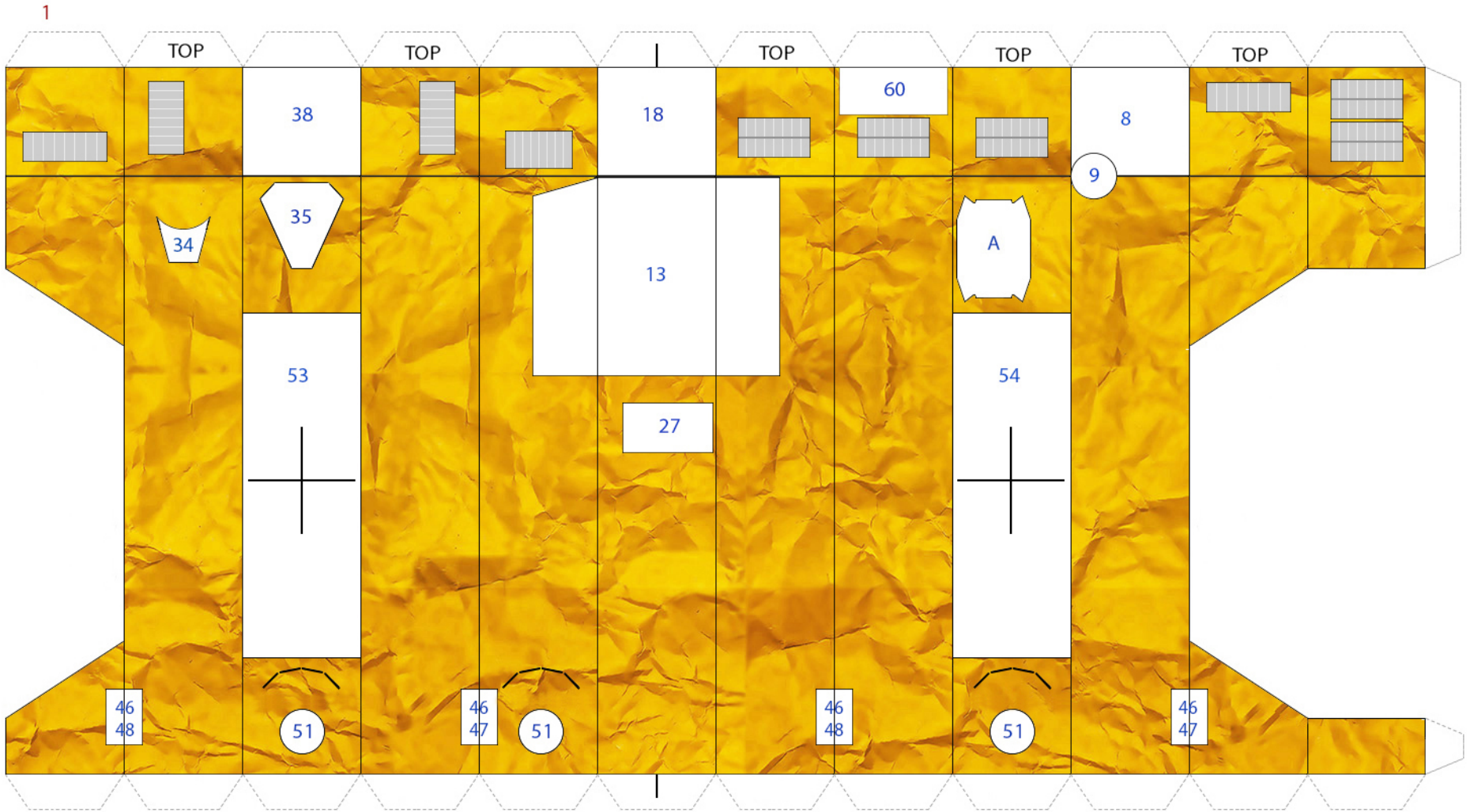


PaperSat Designs
Spacecraft Paper Models

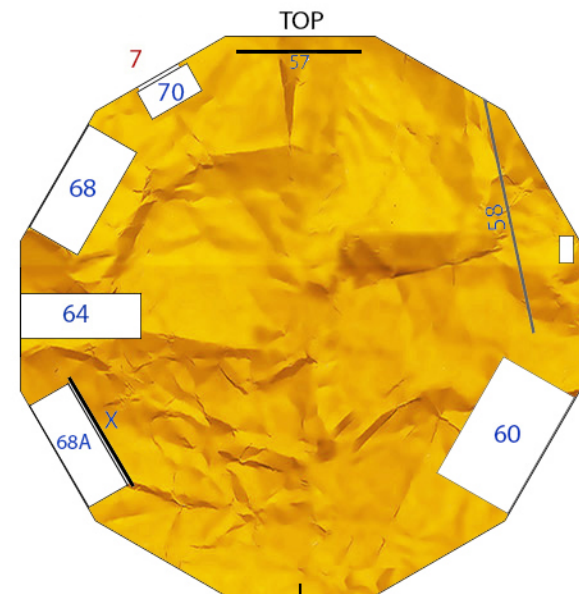
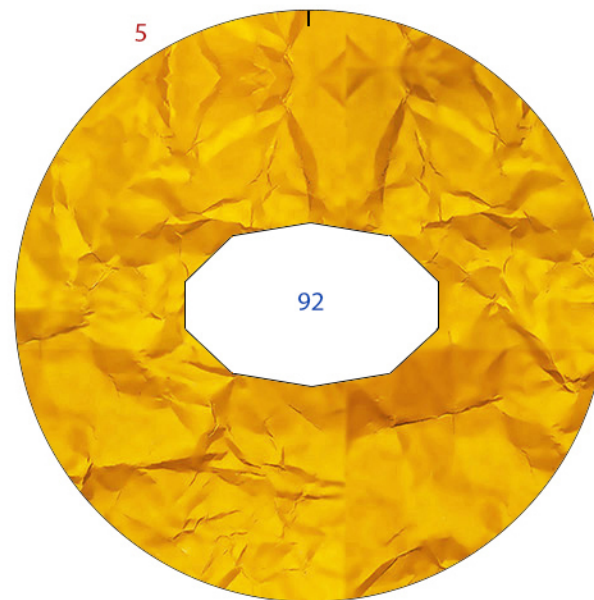
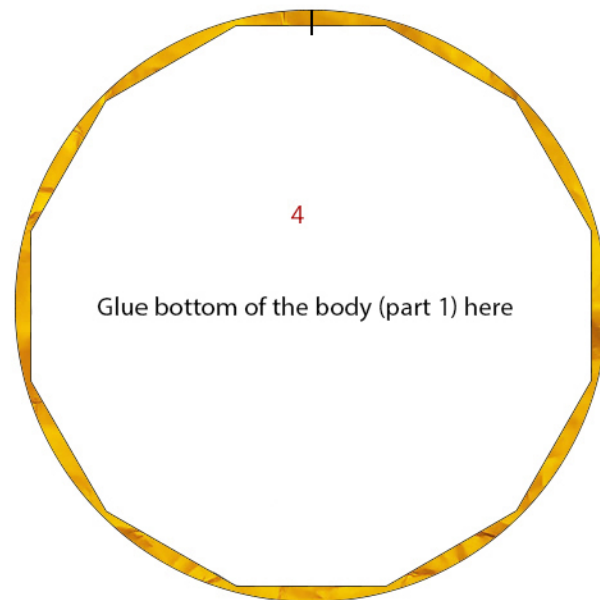
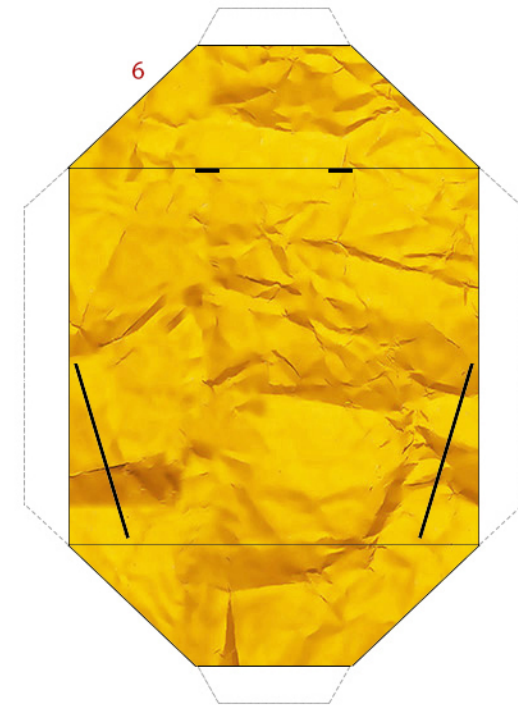
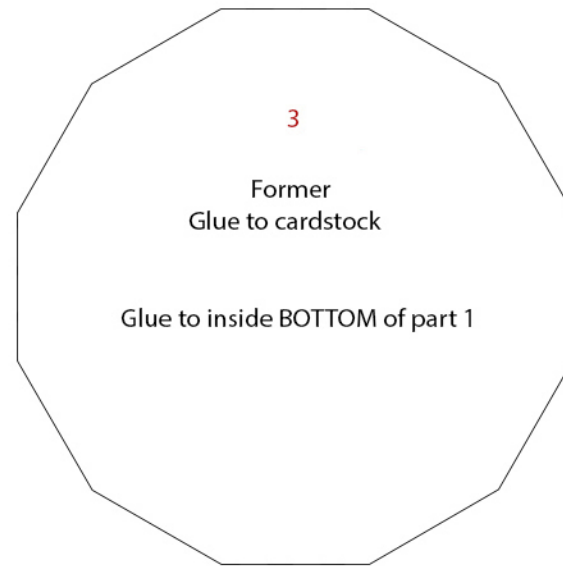
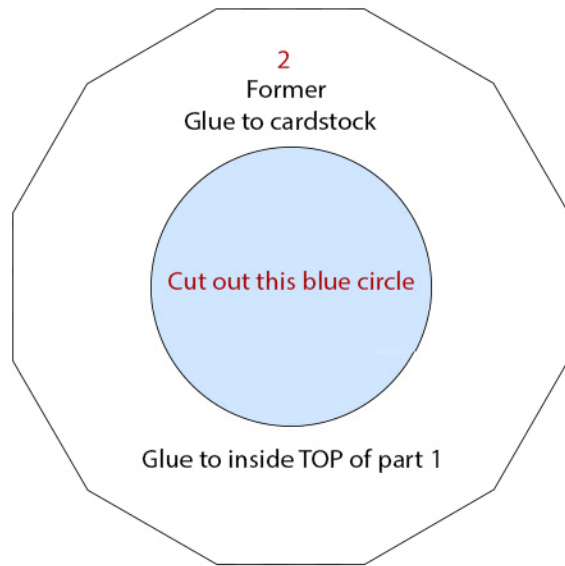
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Print all pages on 65 lb cardstock is recommended for best results.

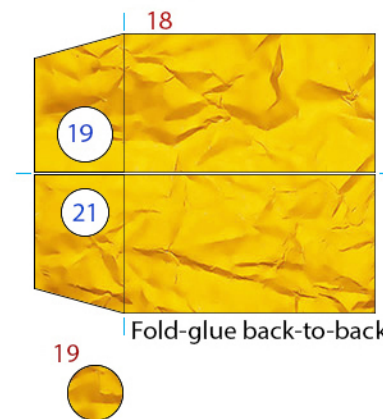
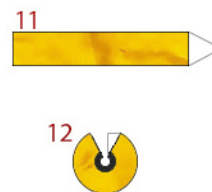
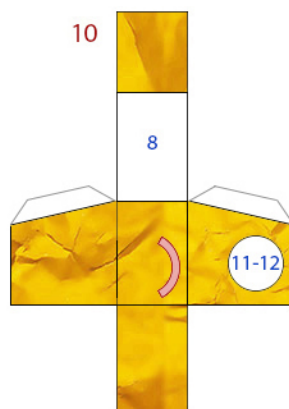
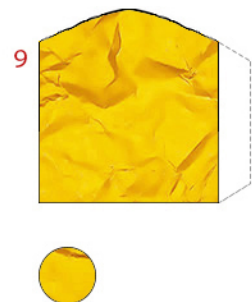
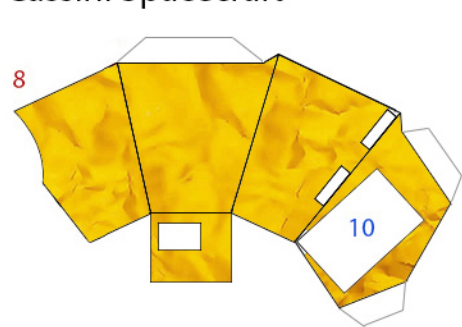


Cassini Spacecraft



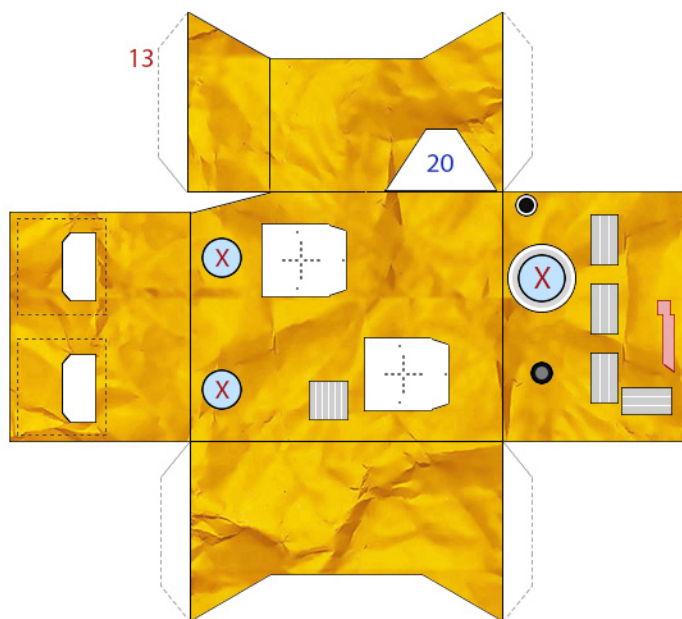
Glue both parts 6 and 7 to cardstock, then glue back-to-back

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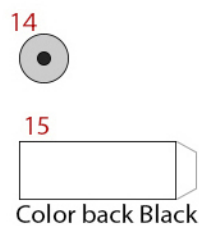


Fold-glue back-to-back

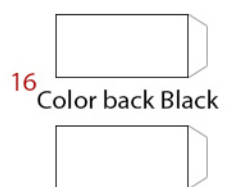
Glue to cardstock



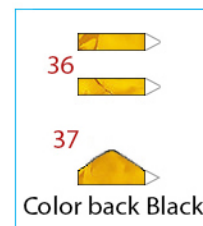
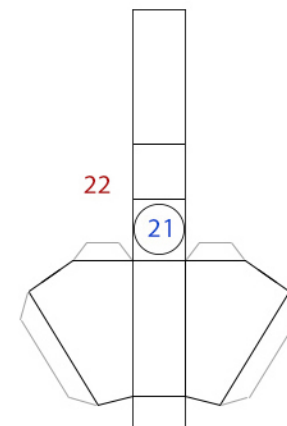
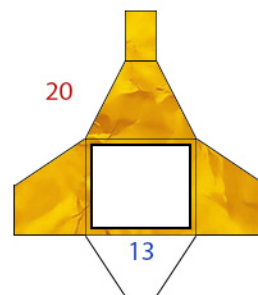
Cut out the blue areas



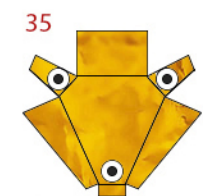
Color back Black



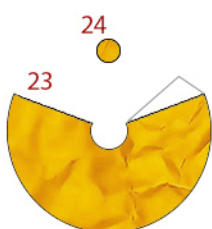
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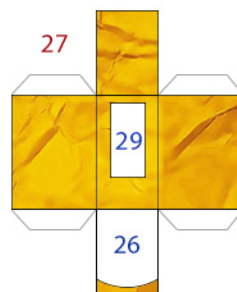
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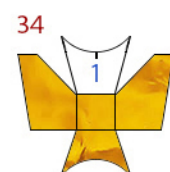
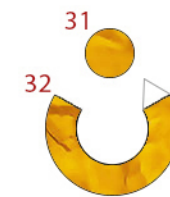
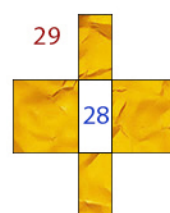
Poke pin holes on the three black dots



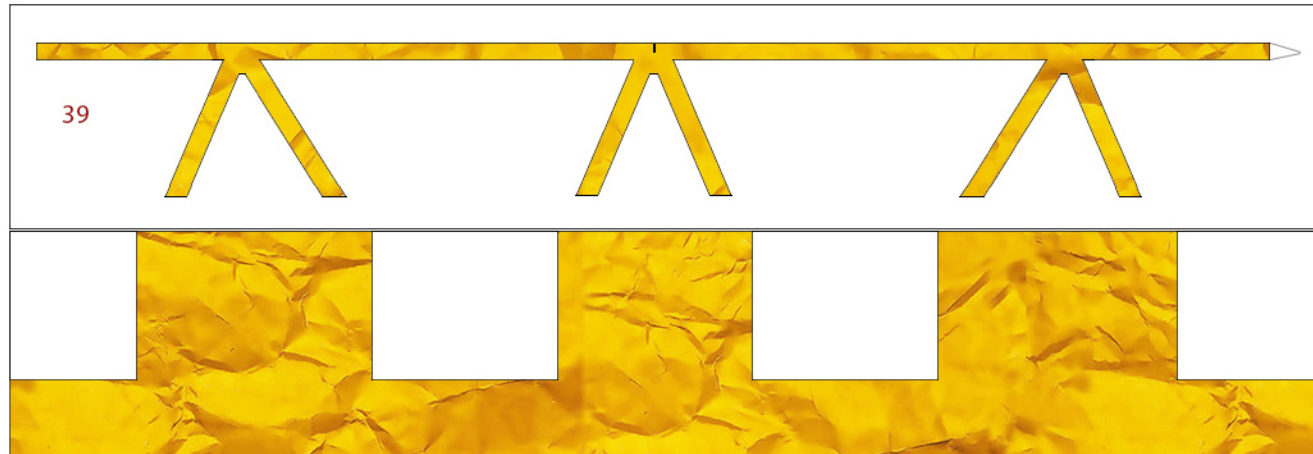
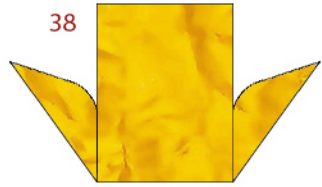
Glue to cardstock, glue inside the ring (part 25)



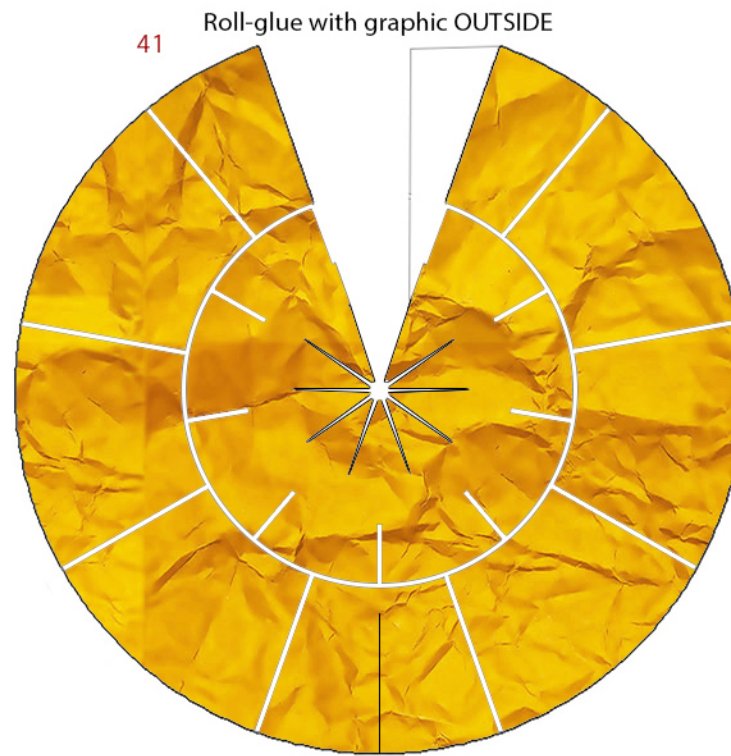
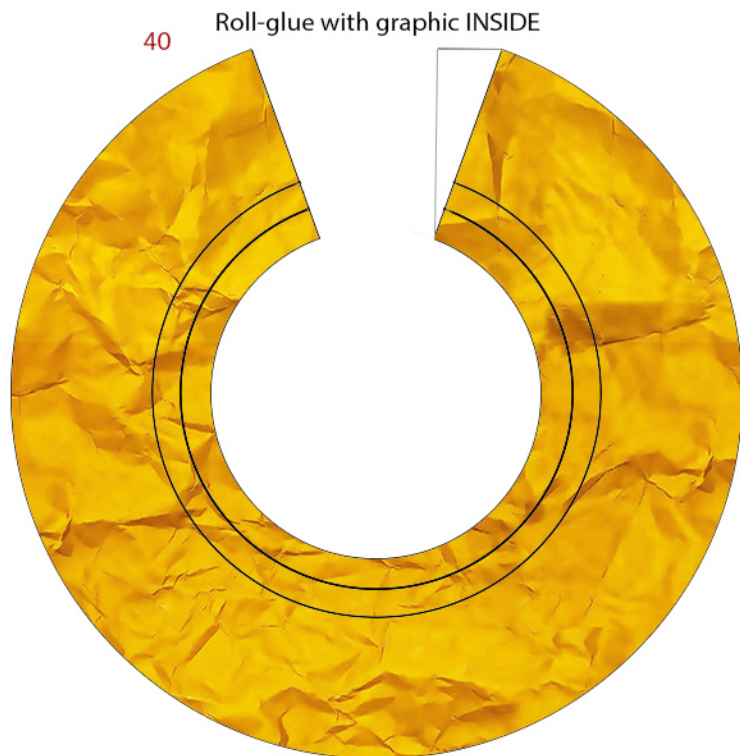
Glue back-to-back



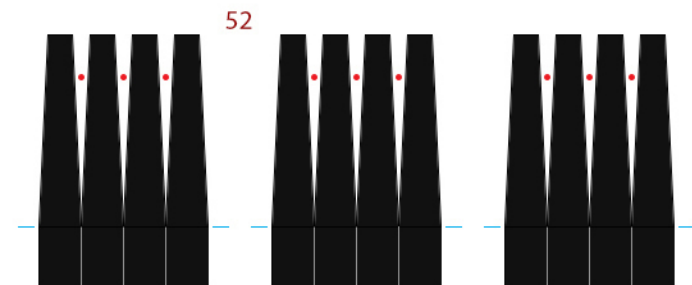
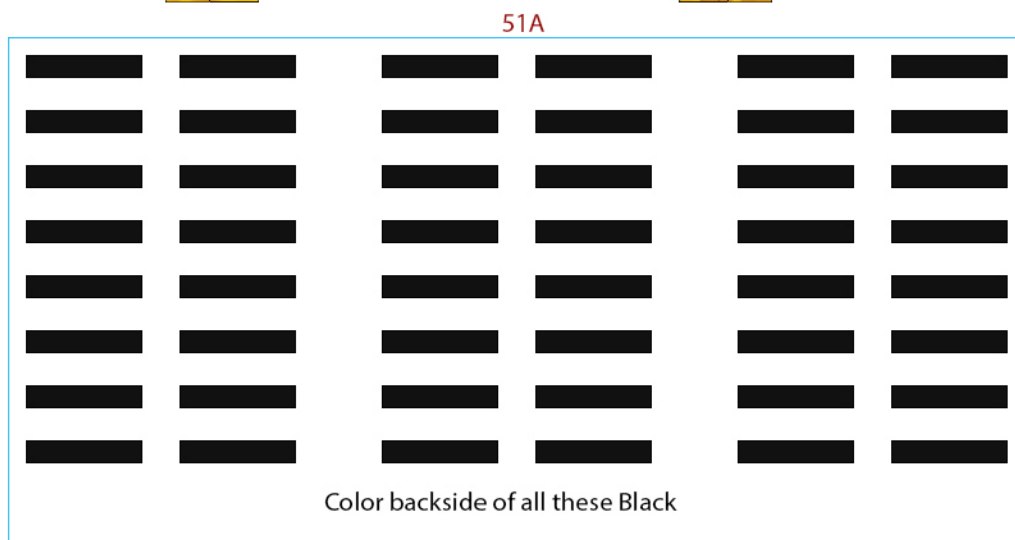
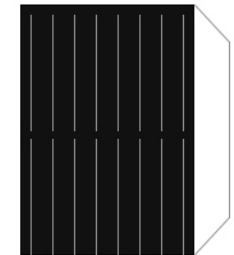
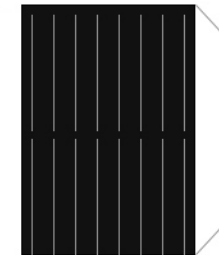
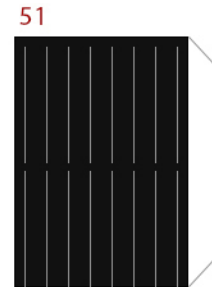
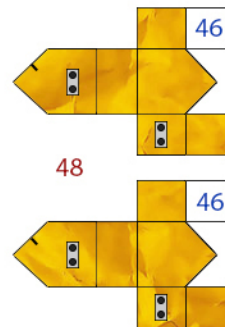
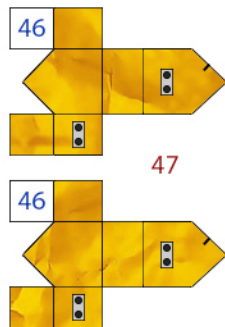
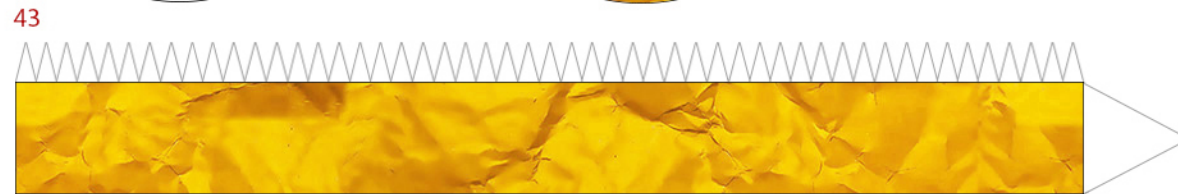
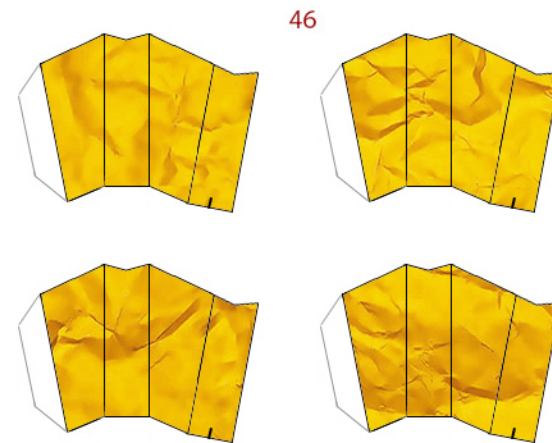
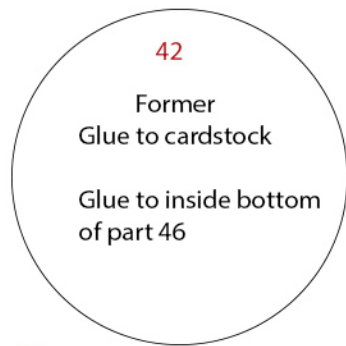
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Fold-glue back-to-back for graphics on both sides

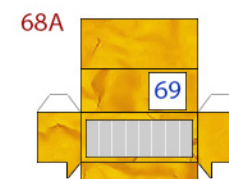
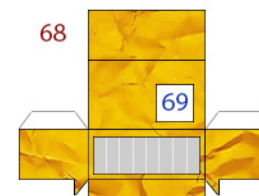
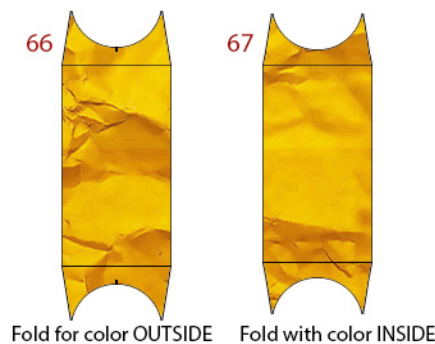
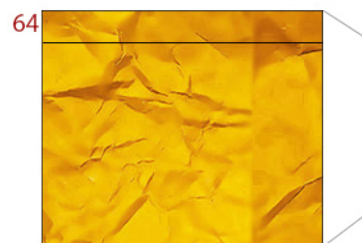
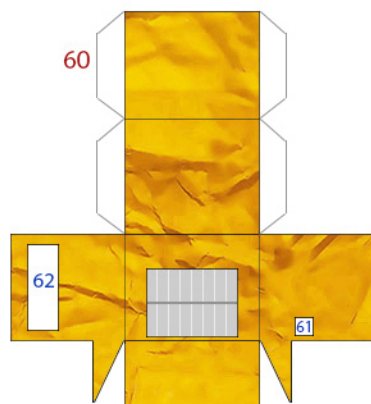
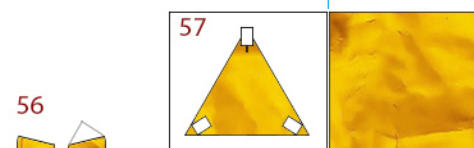
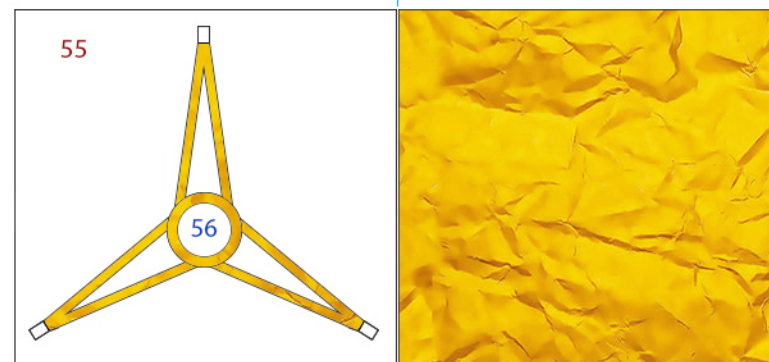
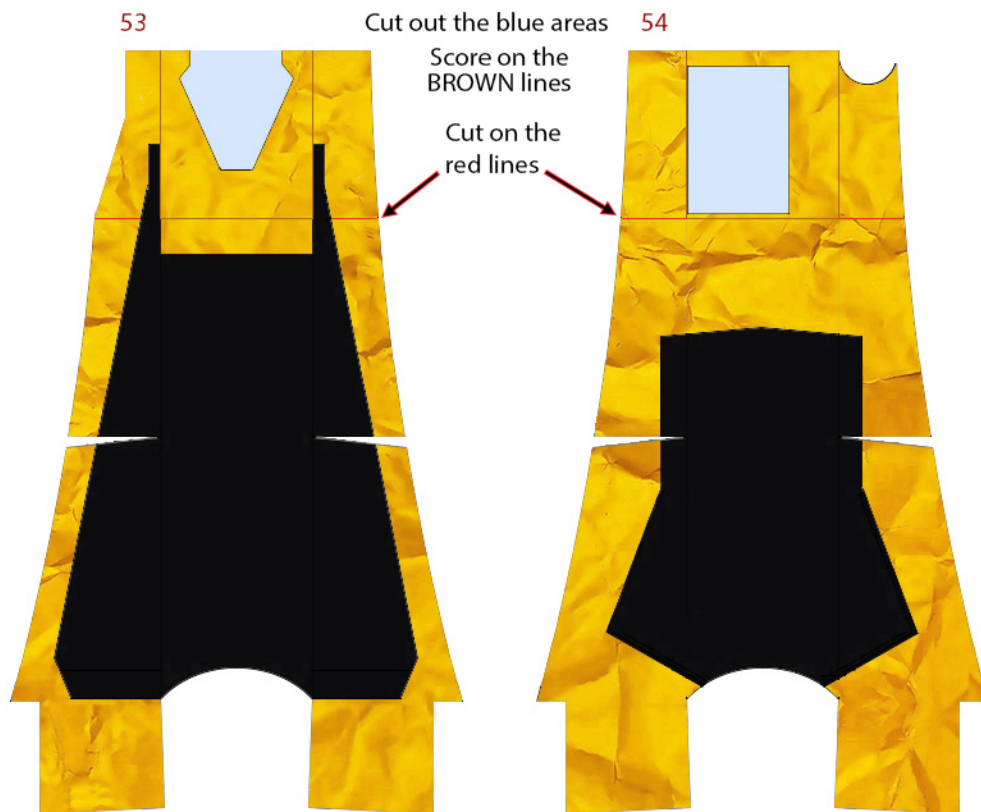


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Color backside of these Black. Spaces with the red dot can act as glue tabs. Score at the grey and blue lines

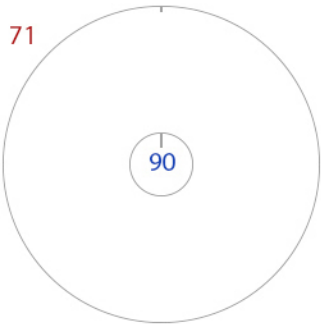
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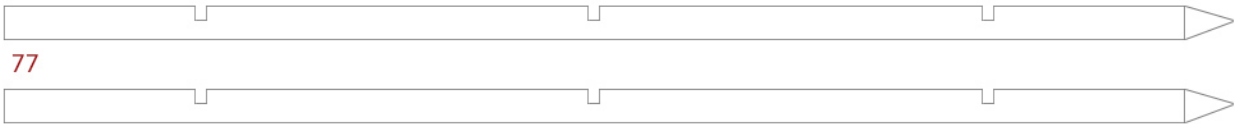
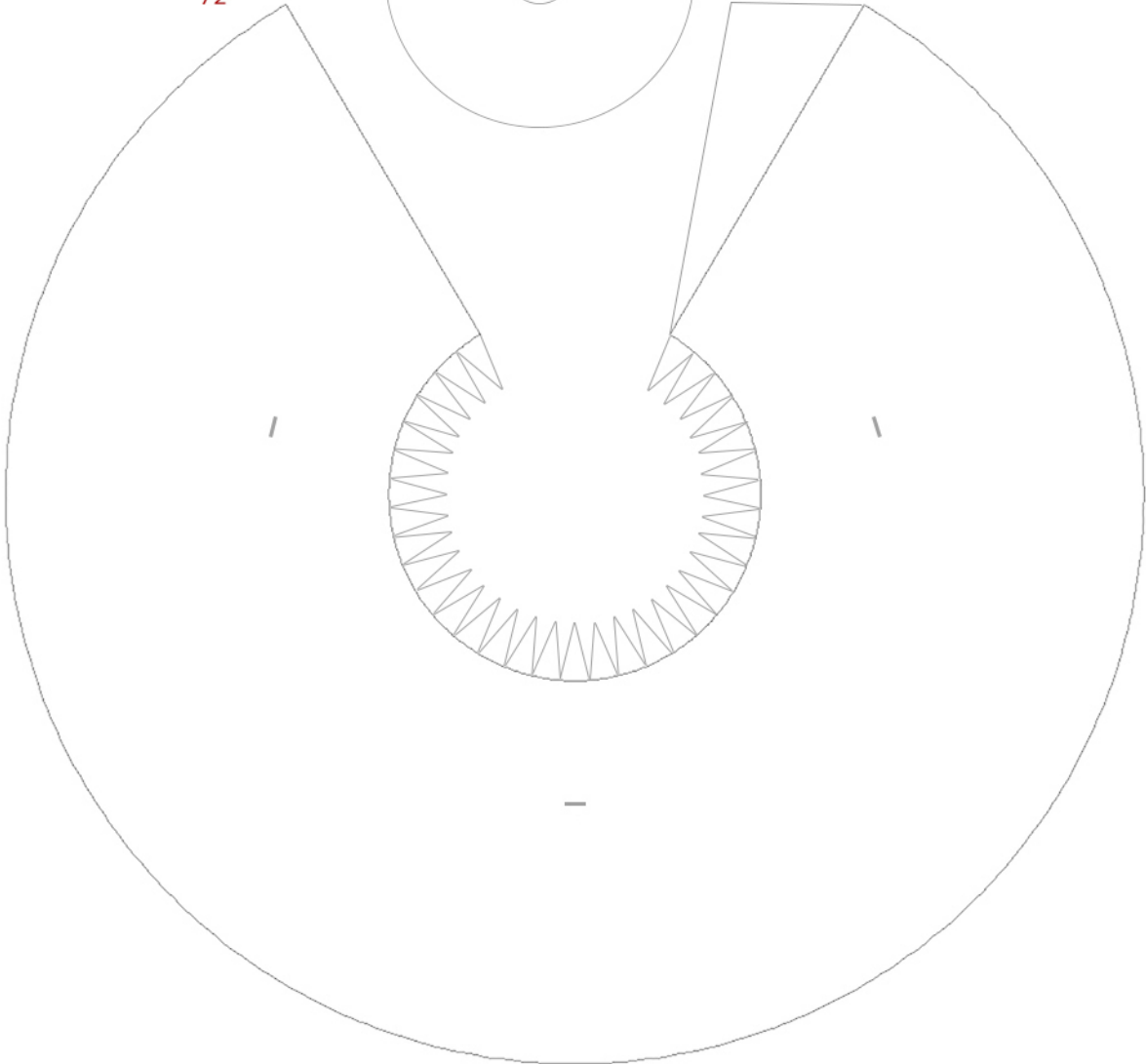
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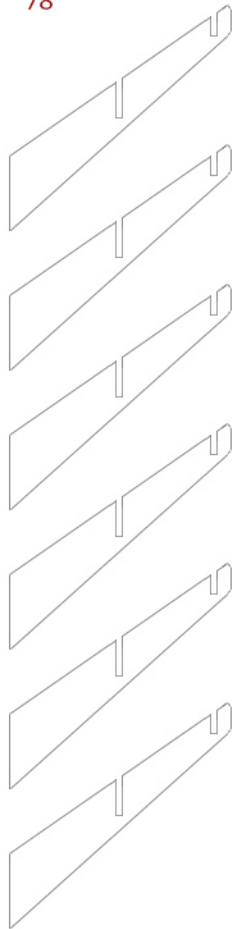
HGA - INSIDE



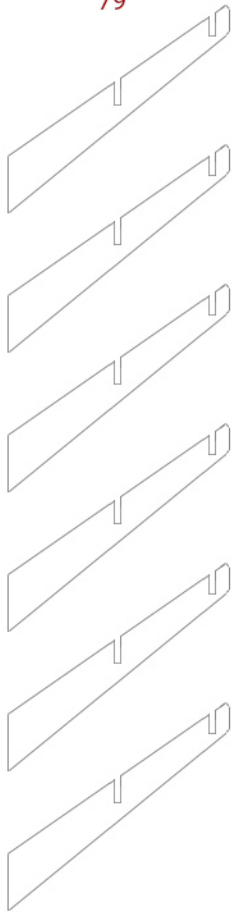
72



78



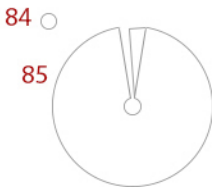
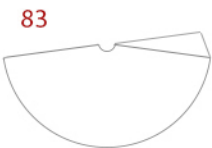
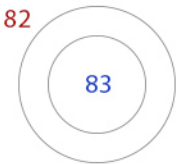
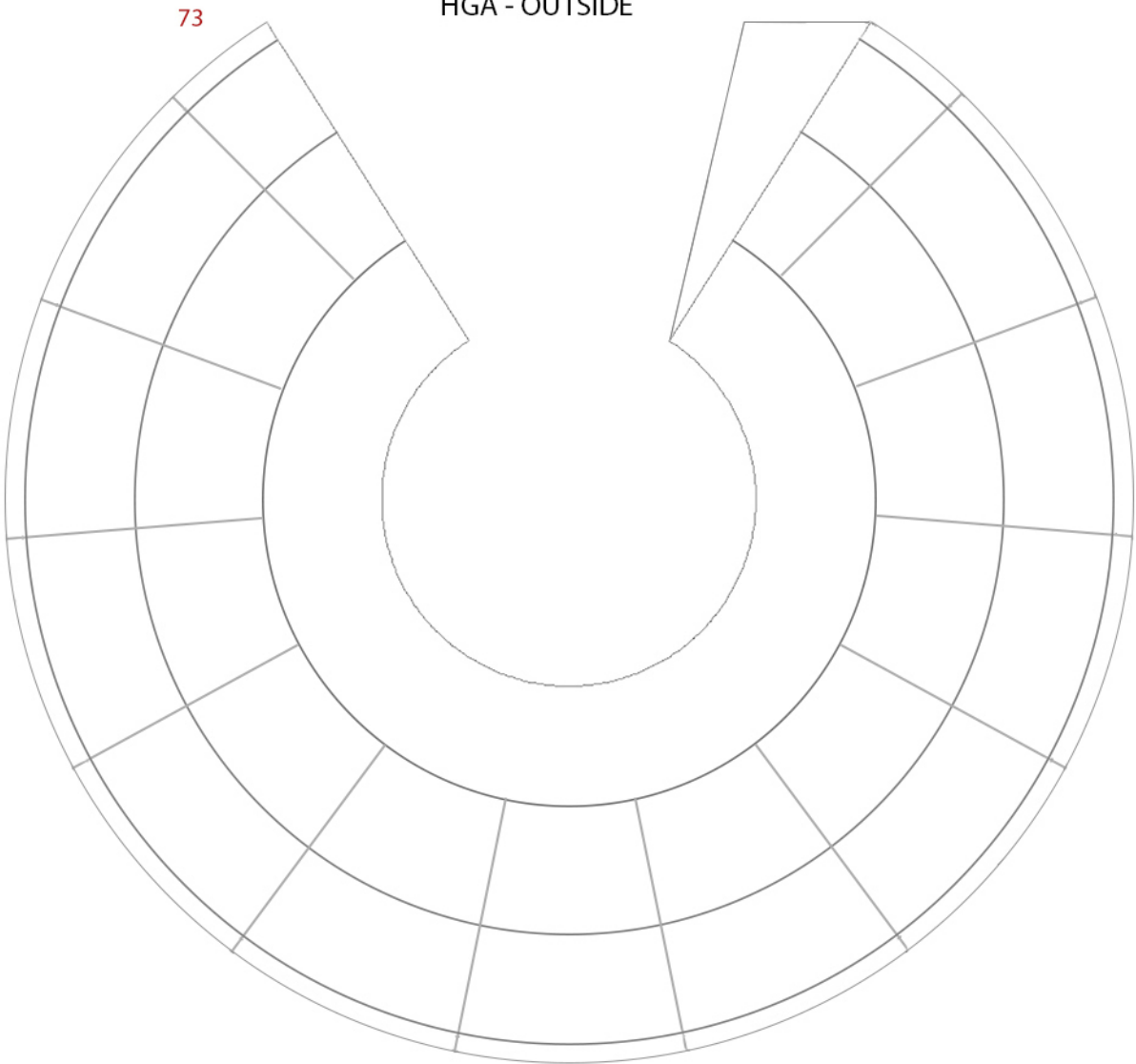
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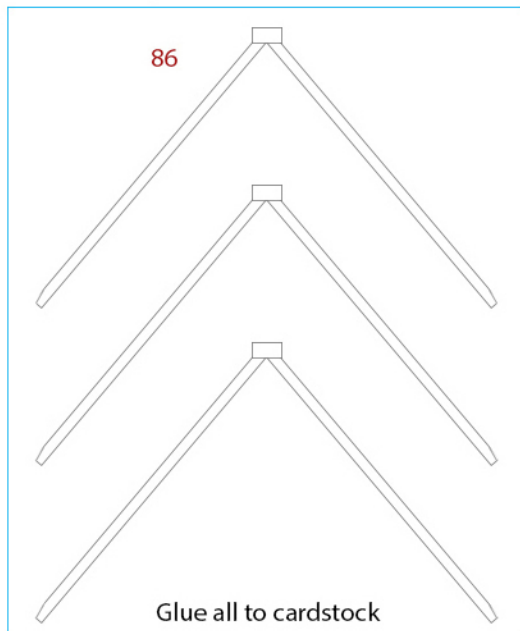
Glue all to cardstock

Cassini Spacecraft

HGA - OUTSIDE



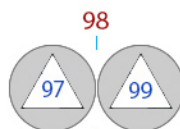
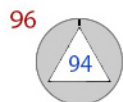
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Cut three plastic broom straws or thin music wires or similar material around 150 mm (6 inches) long for the three antennas.



Glue to three layers of cardstock



Fold-glue back-to-back

