



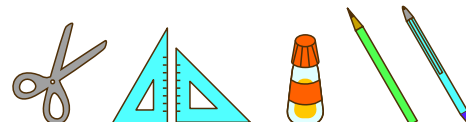
## Structure of the Sun

The Sun was born about 4.6 billion years ago, and has been shining over and nurturing us and all lives on the earth. The major difference in the structure between the Sun and the Earth or the moon is that it is entirely composed of high temperature gases. The Sun is structured with roughly three layers of the core, radiate layer and convection layer, and among these three layers, the core, in particular, has the highest temperature and density, and generates the sources of light and heat by nuclear fusion. This generated energy fills the radiate layer and it is carried to the surface (photosphere) by actions in the convection layer. Actually, however, it takes hundreds of thousand years before the energy generated in the core reaches the surface of the Sun, and the energy travels the distance between the Sun and the Earth around 150 million km to reach us.

### Assembly tip

- Writing the number of each section on its back side before cutting out the sections is highly recommended.  
(\* This way, you can be sure which section is which even after cutting out the sections.)
- Fold and crease mountain folds and valley folds before applying glue.
- Take your time to cut out each piece carefully.
- Trace along the folds with a ruler and an exhausted pen (no ink) to get a sharper, easier fold.
- When applying glue to large areas, take care to prevent warping of paper that may be caused by over-application of glue.  
Apply small amounts of glue around the peripheral of the piece or use dual-sided tape to minimize warping.

### Necessary utensils



scissors, set square, glue, pencil, used ballpoint pen

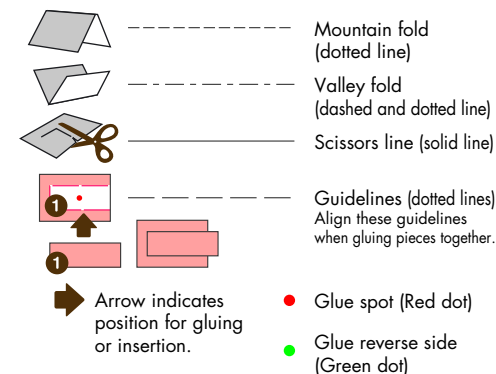
### Caution

- Please read the Assembly Instructions carefully, and assemble in order as shown on the pattern sheets.
- This papercraft involves using glue, scissors, and other utensils and materials that may be dangerous to young children.  
Please work somewhere out of reach of young children.

### Pattern

Nineteen US letter sheets (No. 1 to No. 19)

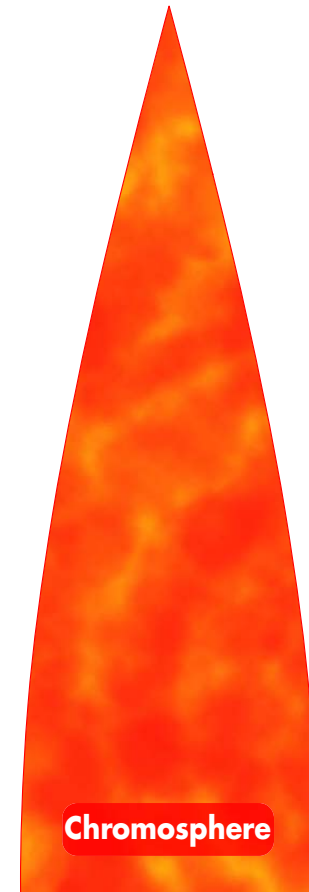
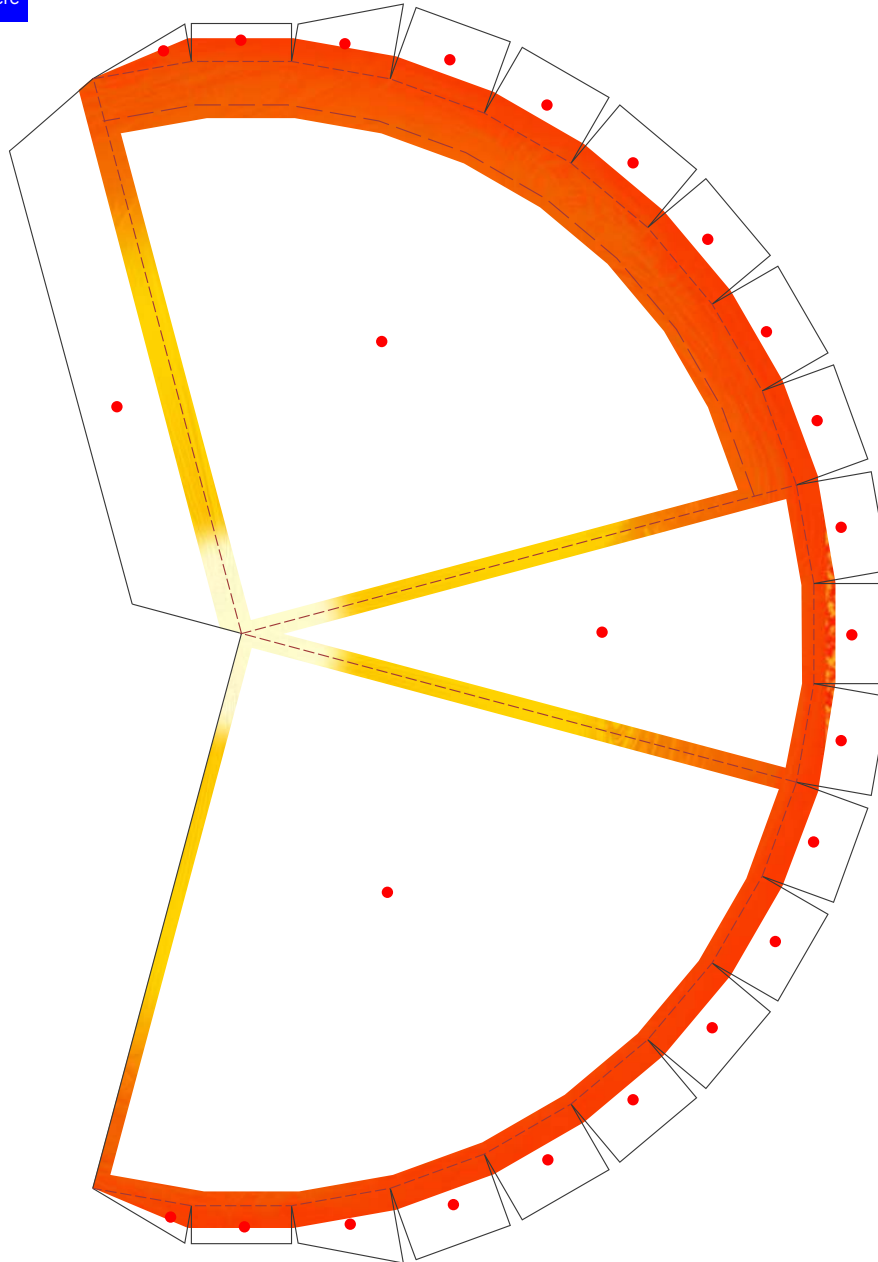
### Notation Key



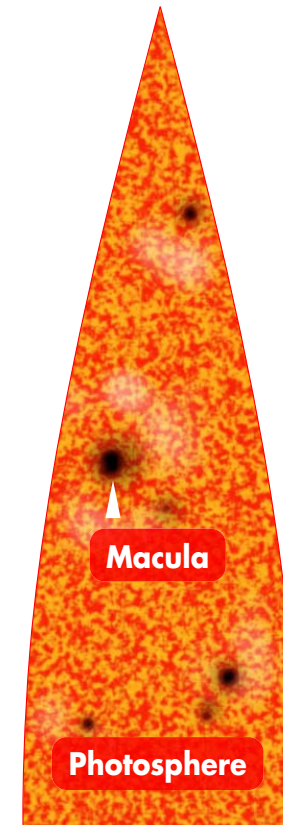
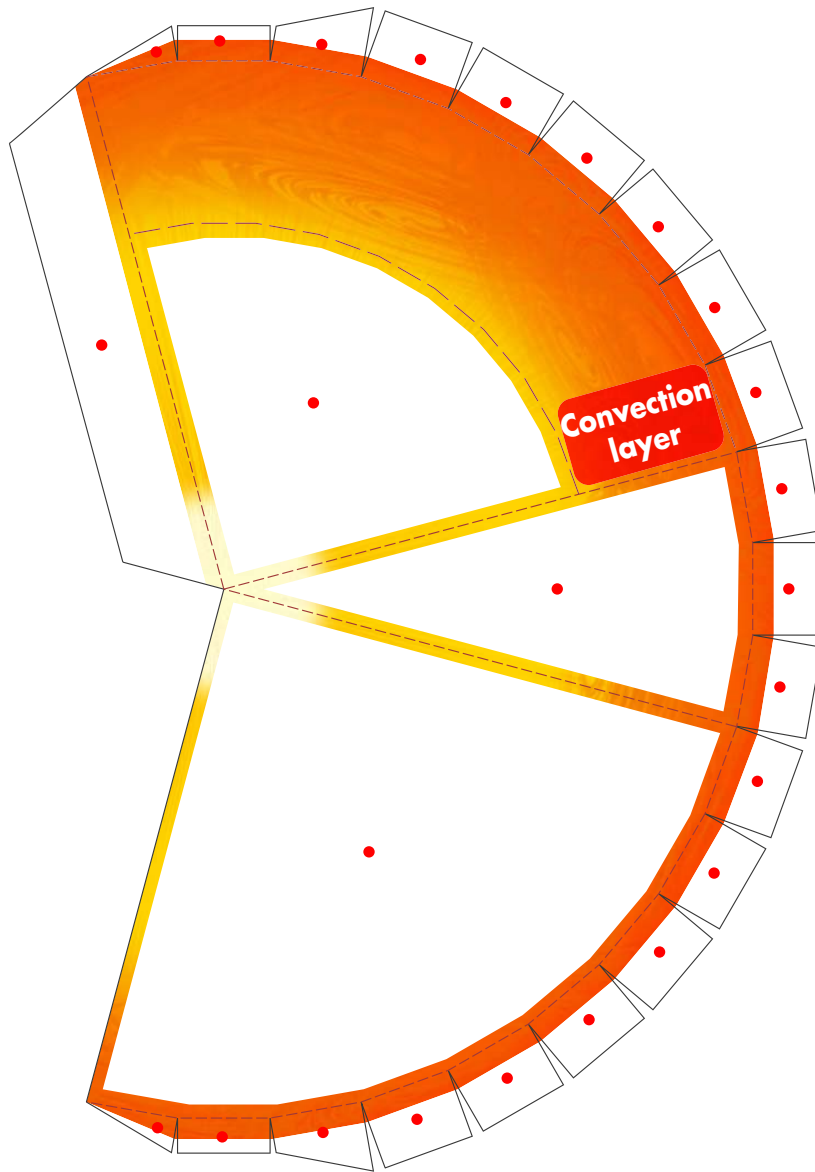
\* The following are used in the assembly instructions.

Indicates reverse side of paper.

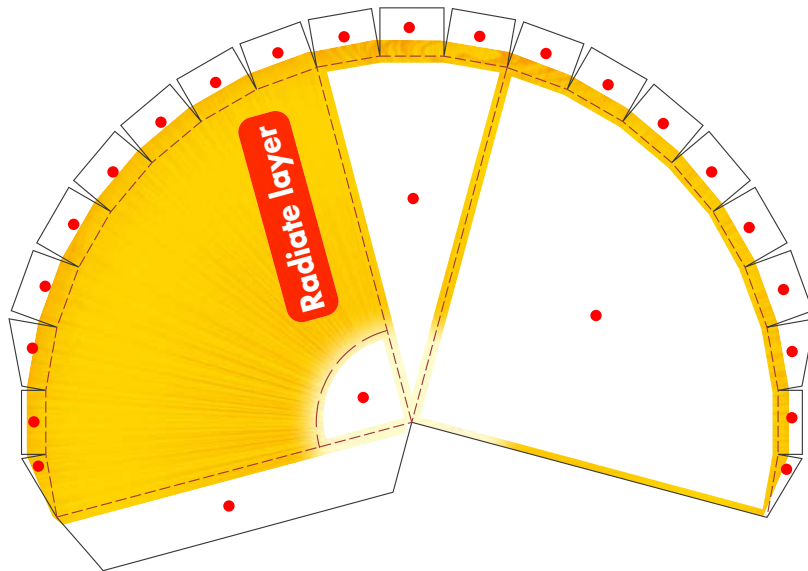
Chromosphere



Photosphere

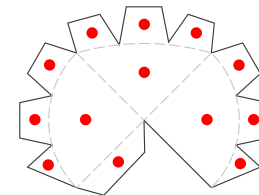
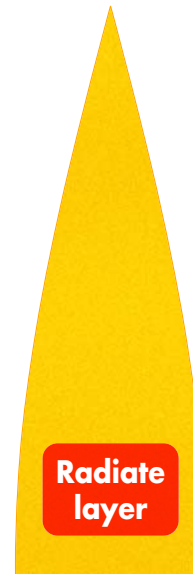
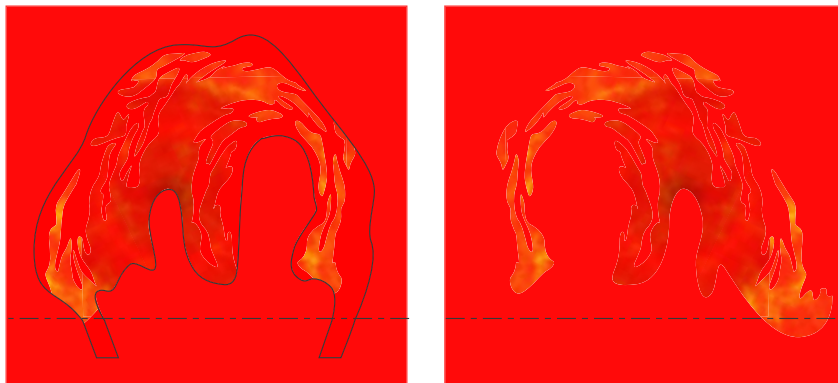


Radiate layer Core Prominence



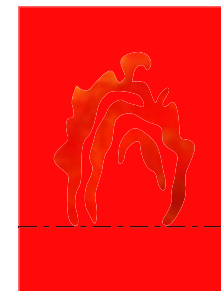
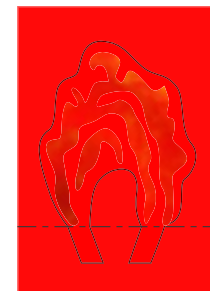
Glue the rear sides together and cut off the parts drawn on the parts.  
Do not glue the valley-fold parts.

P-2

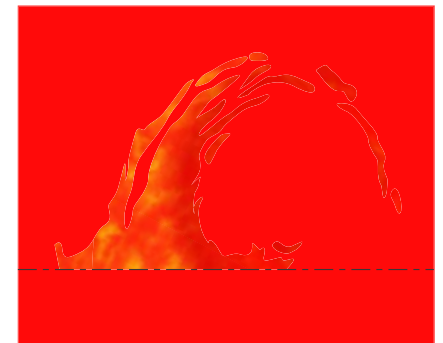
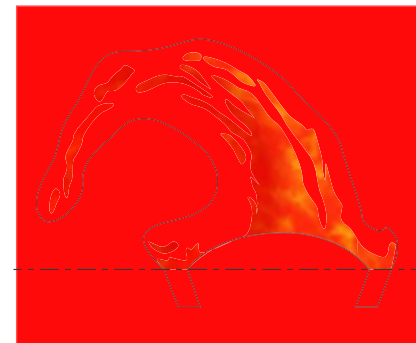


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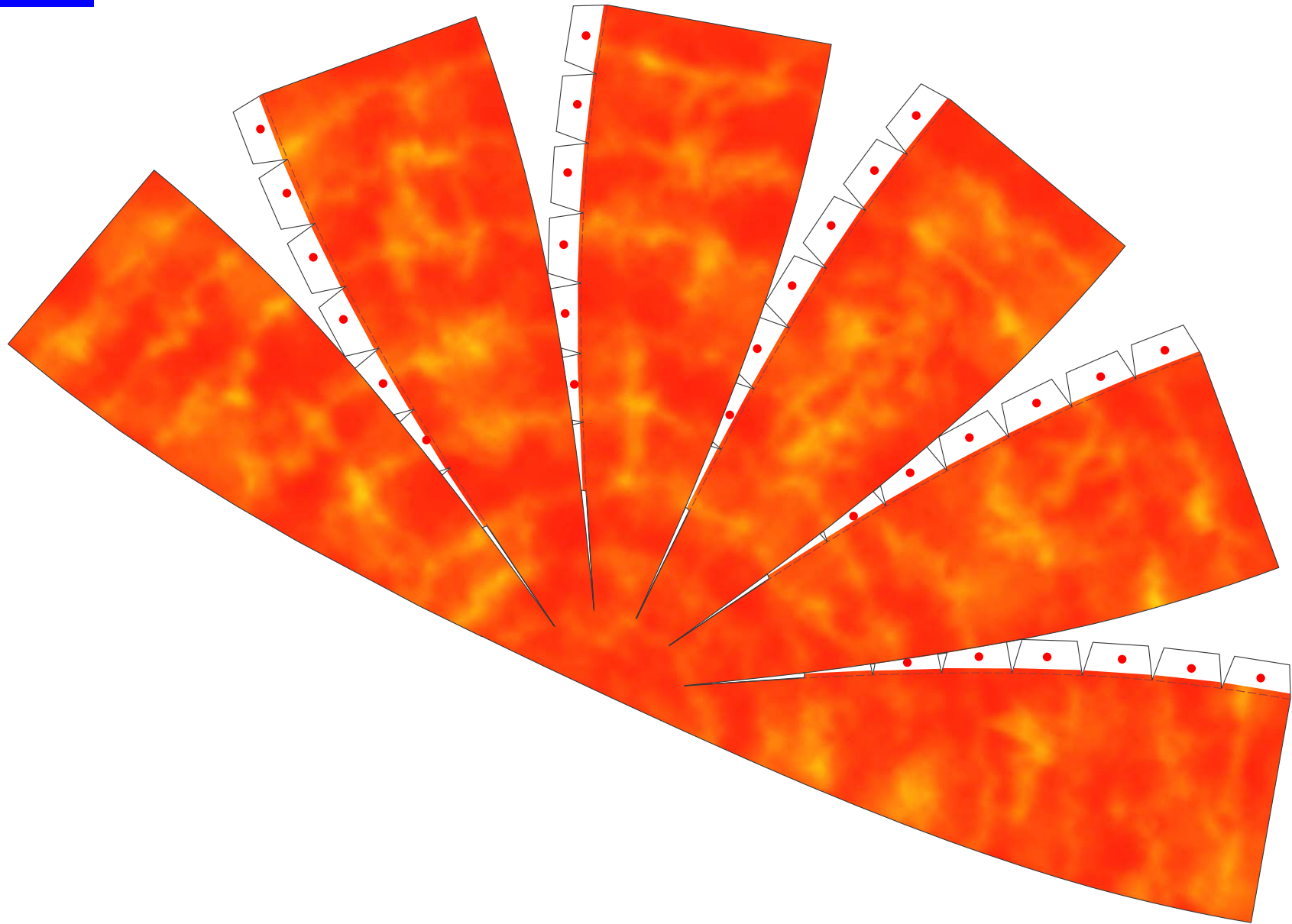
P-1



P-3

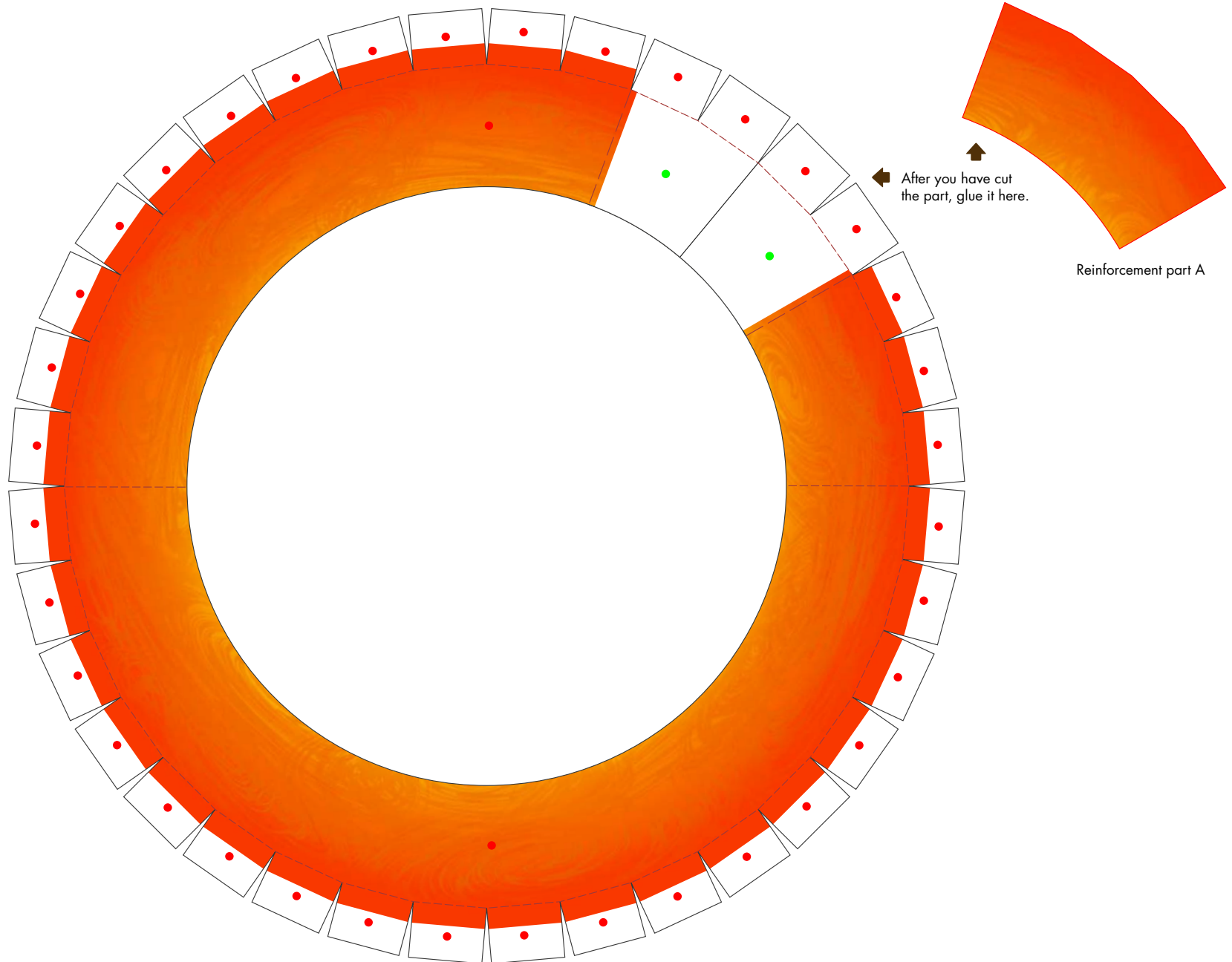


Upper part of the Sun

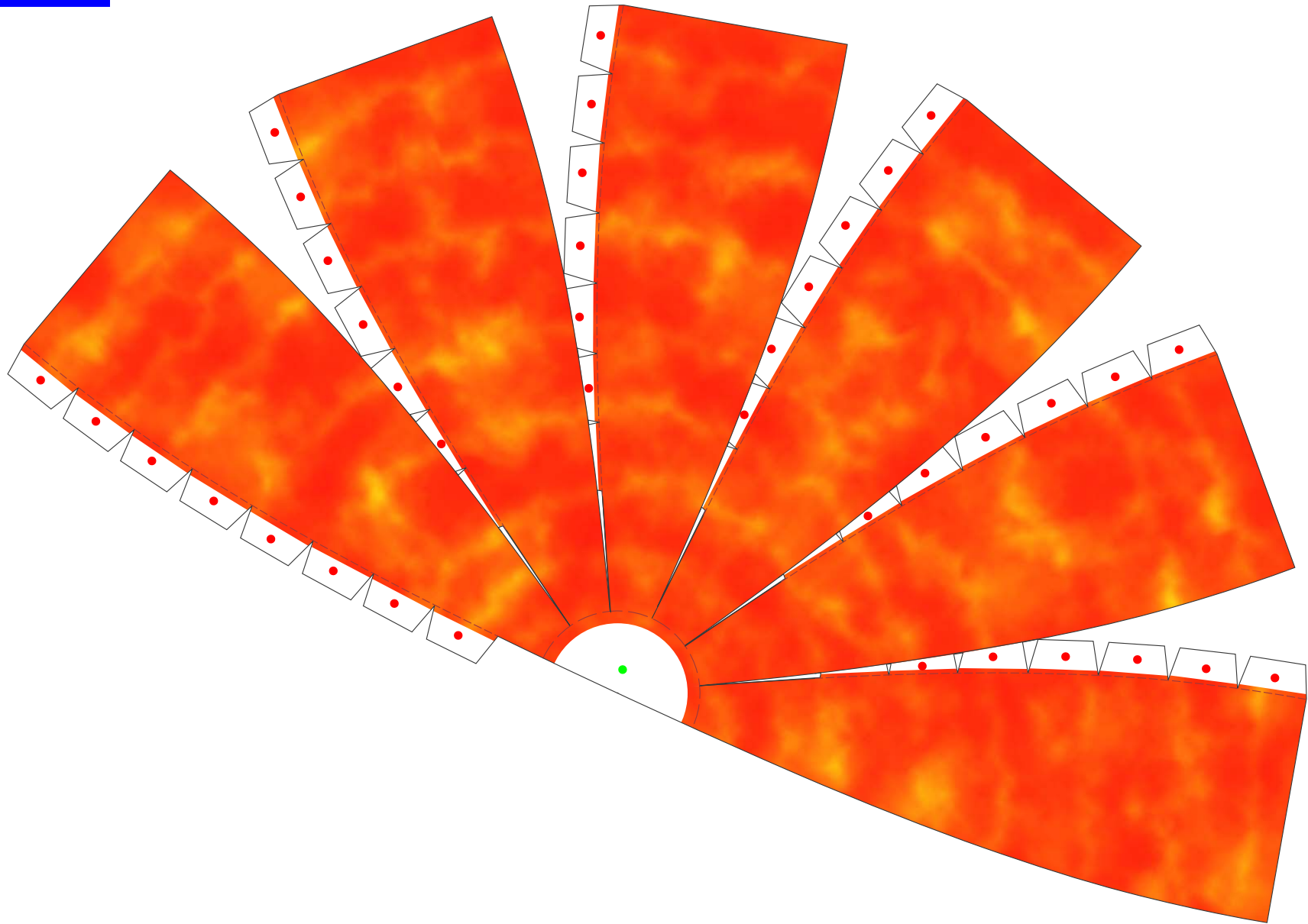




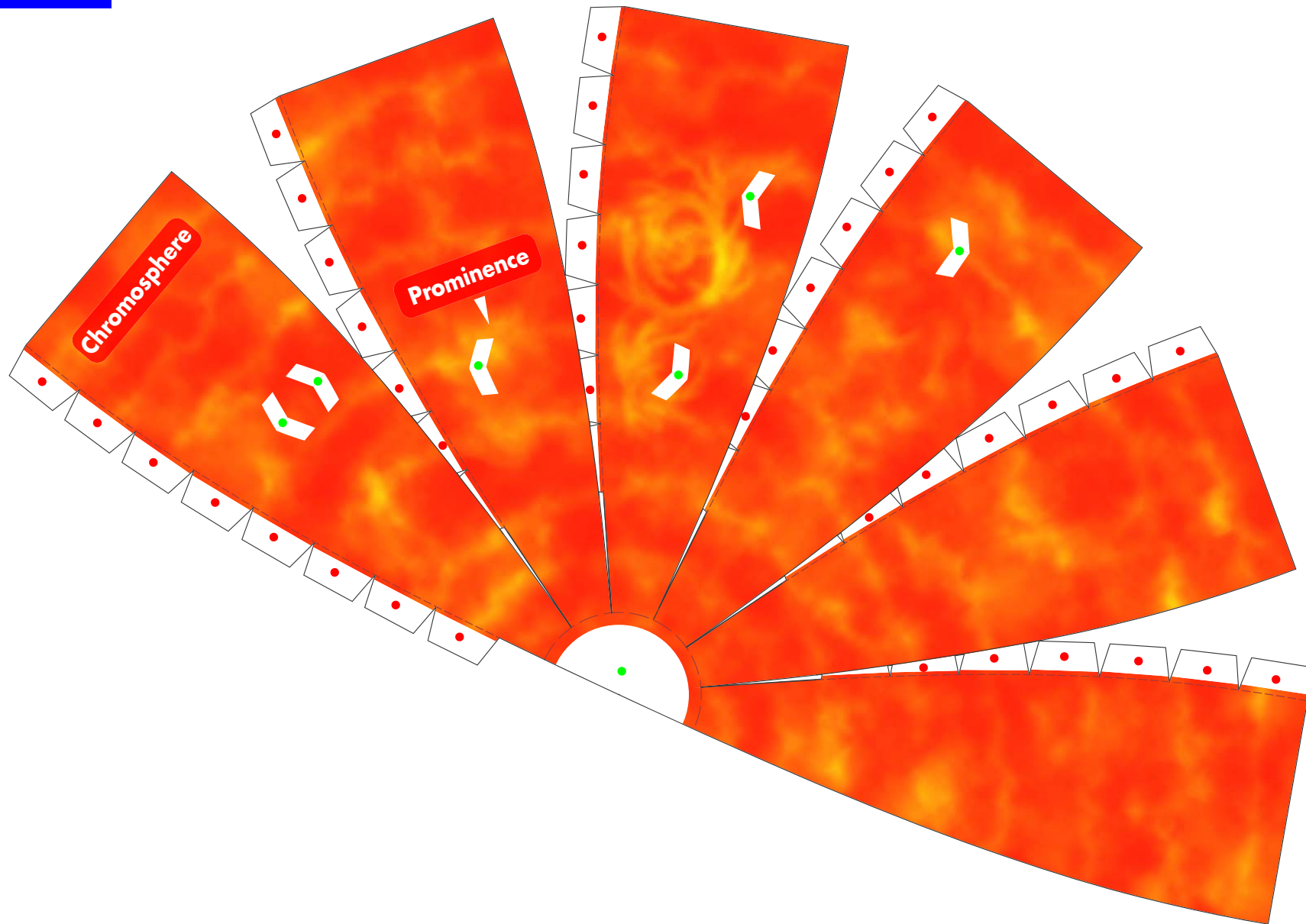
Upper part of the Sun



Lower part of the Sun

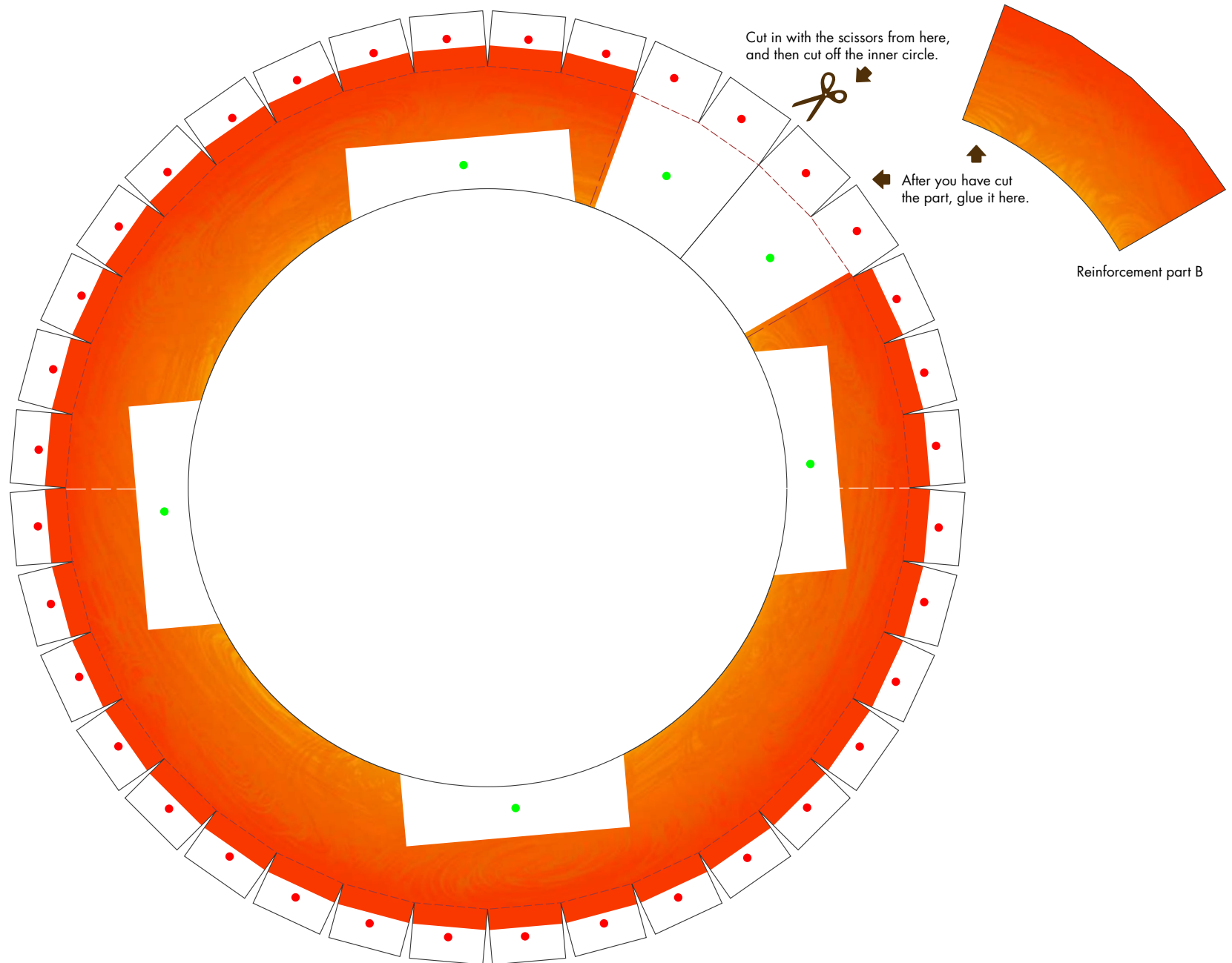


Lower part of the Sun

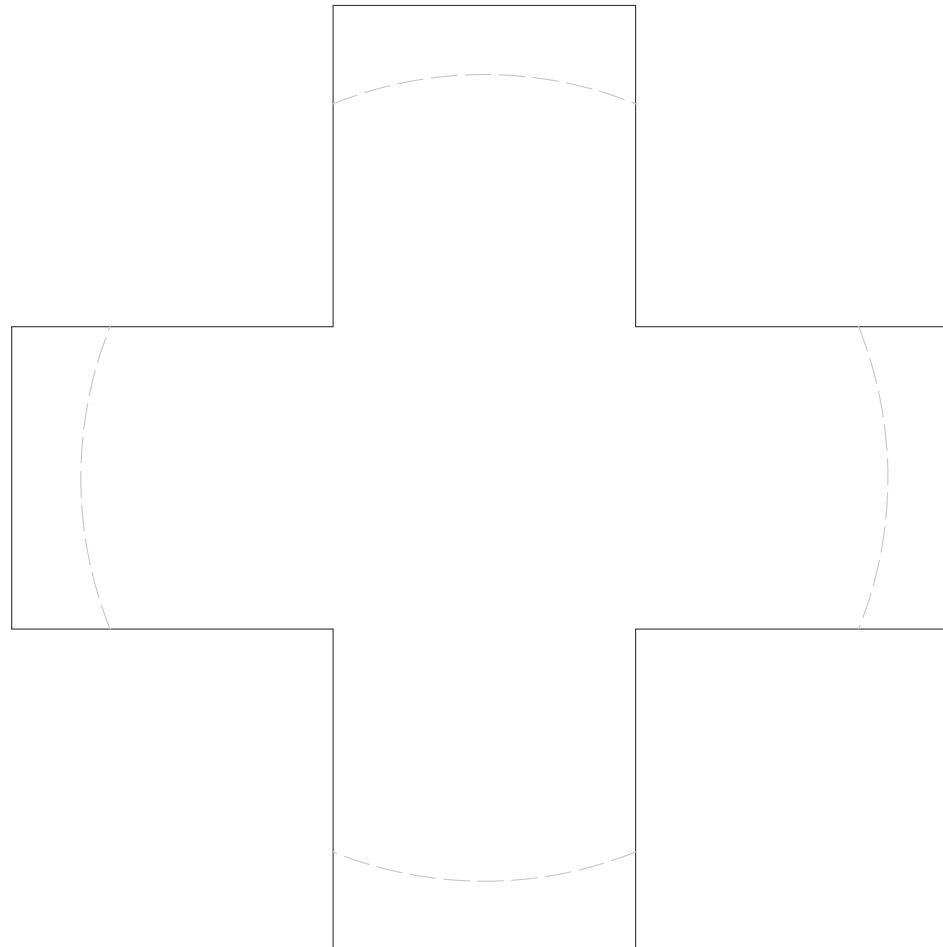




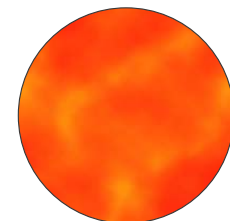
Lower part of the Sun



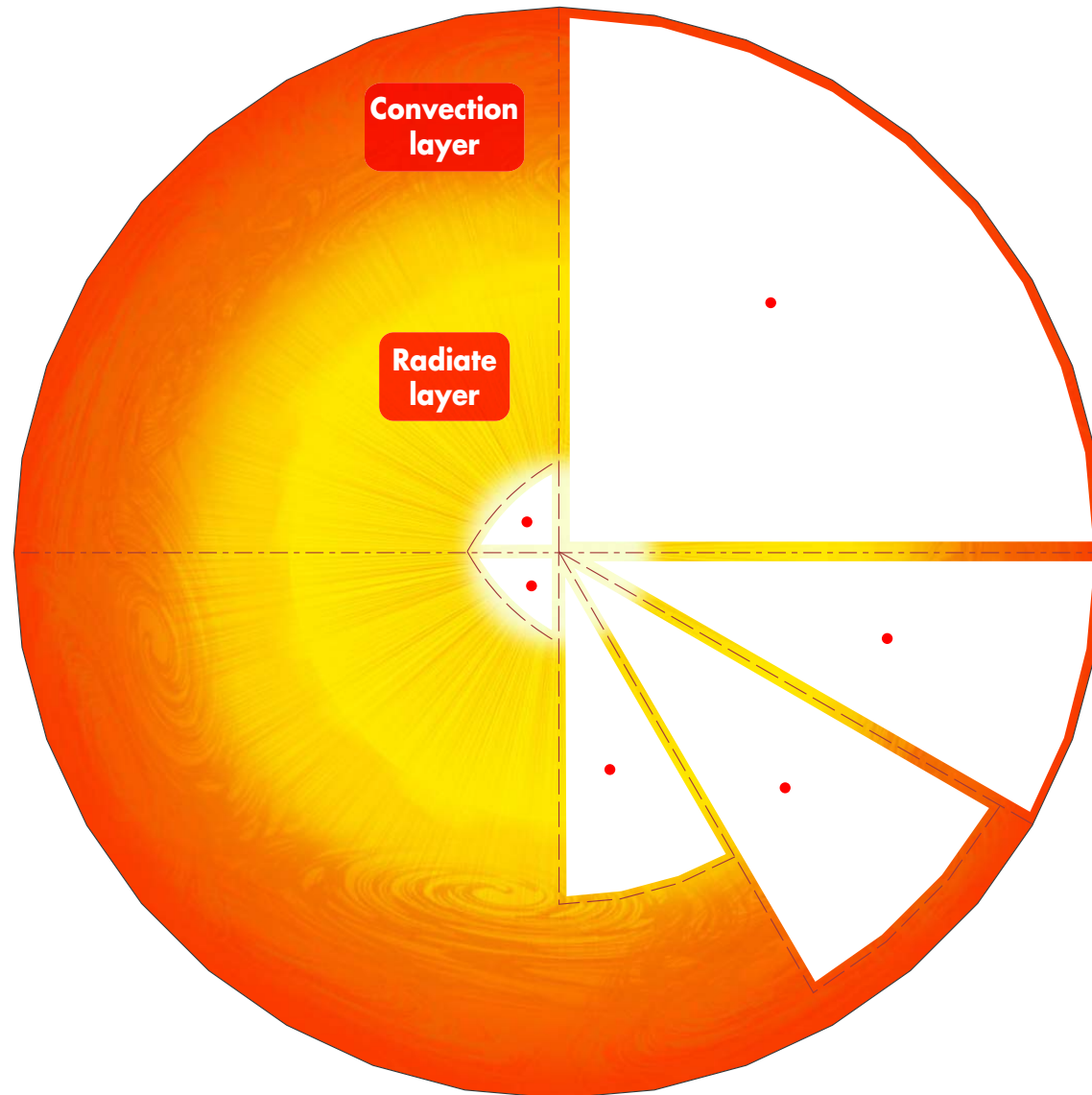
Lower part of the Sun



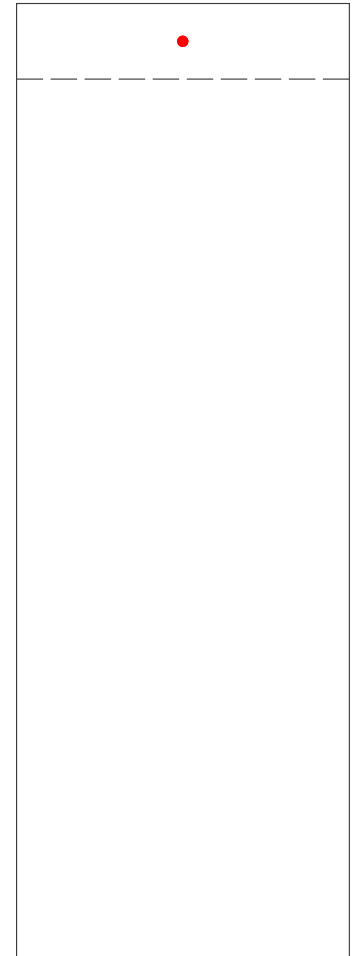
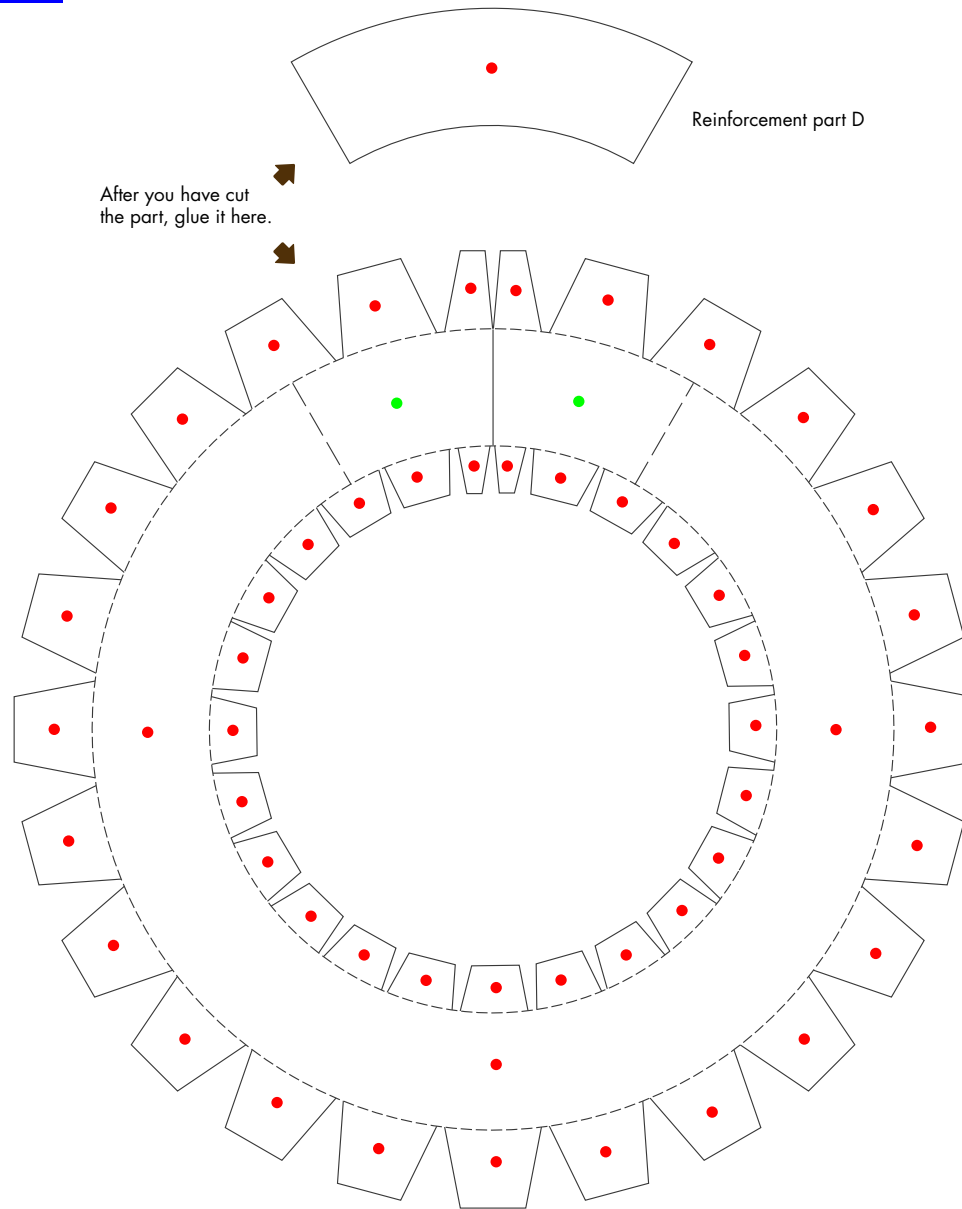
Reinforcement part C



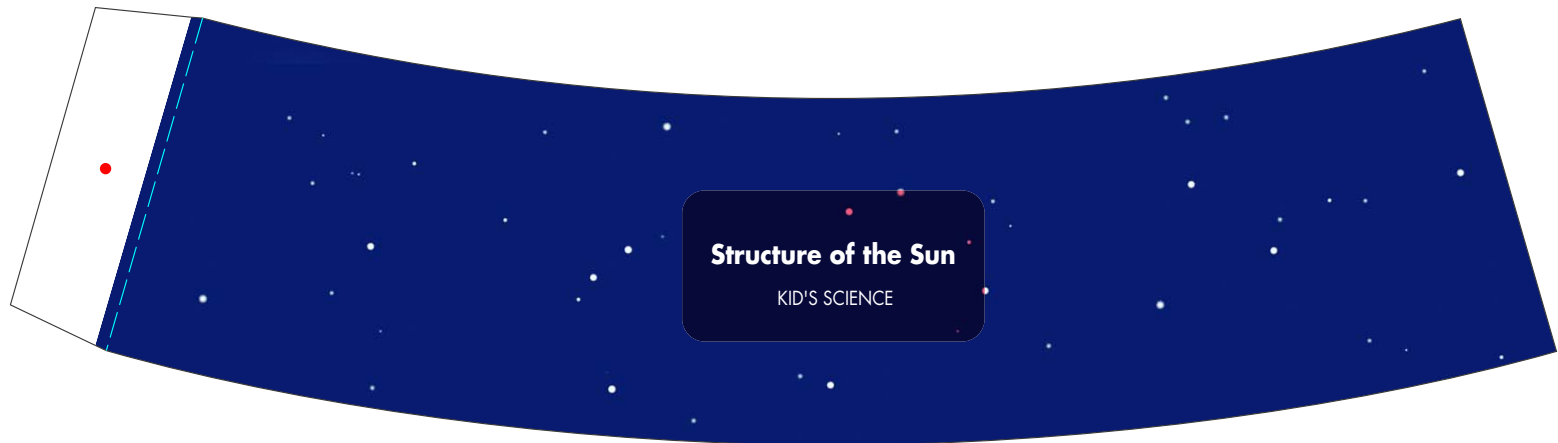
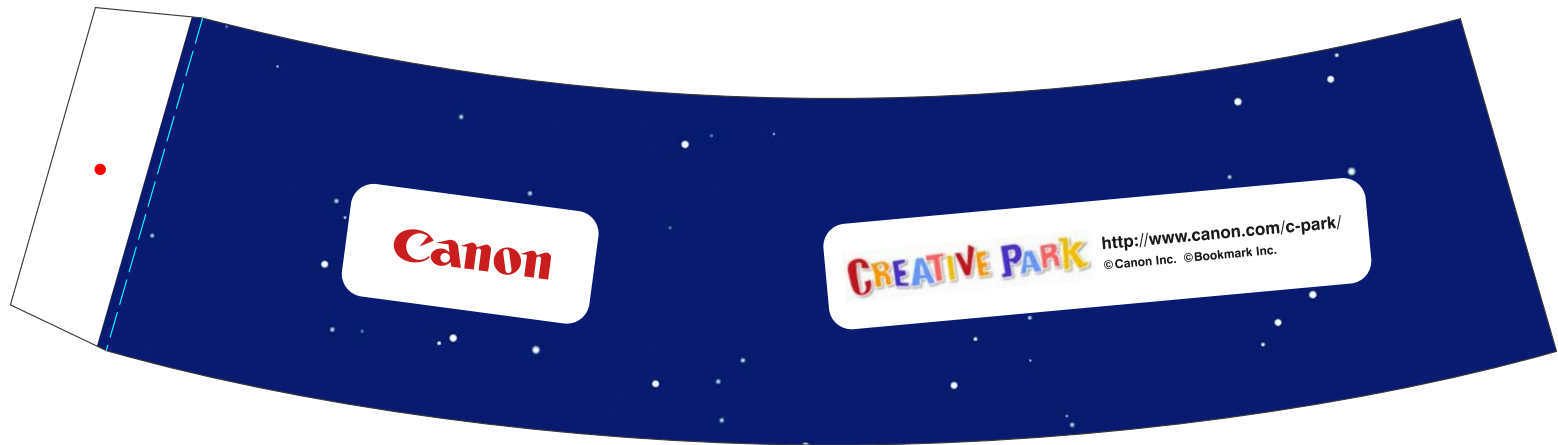
Lower part of the Sun



Base

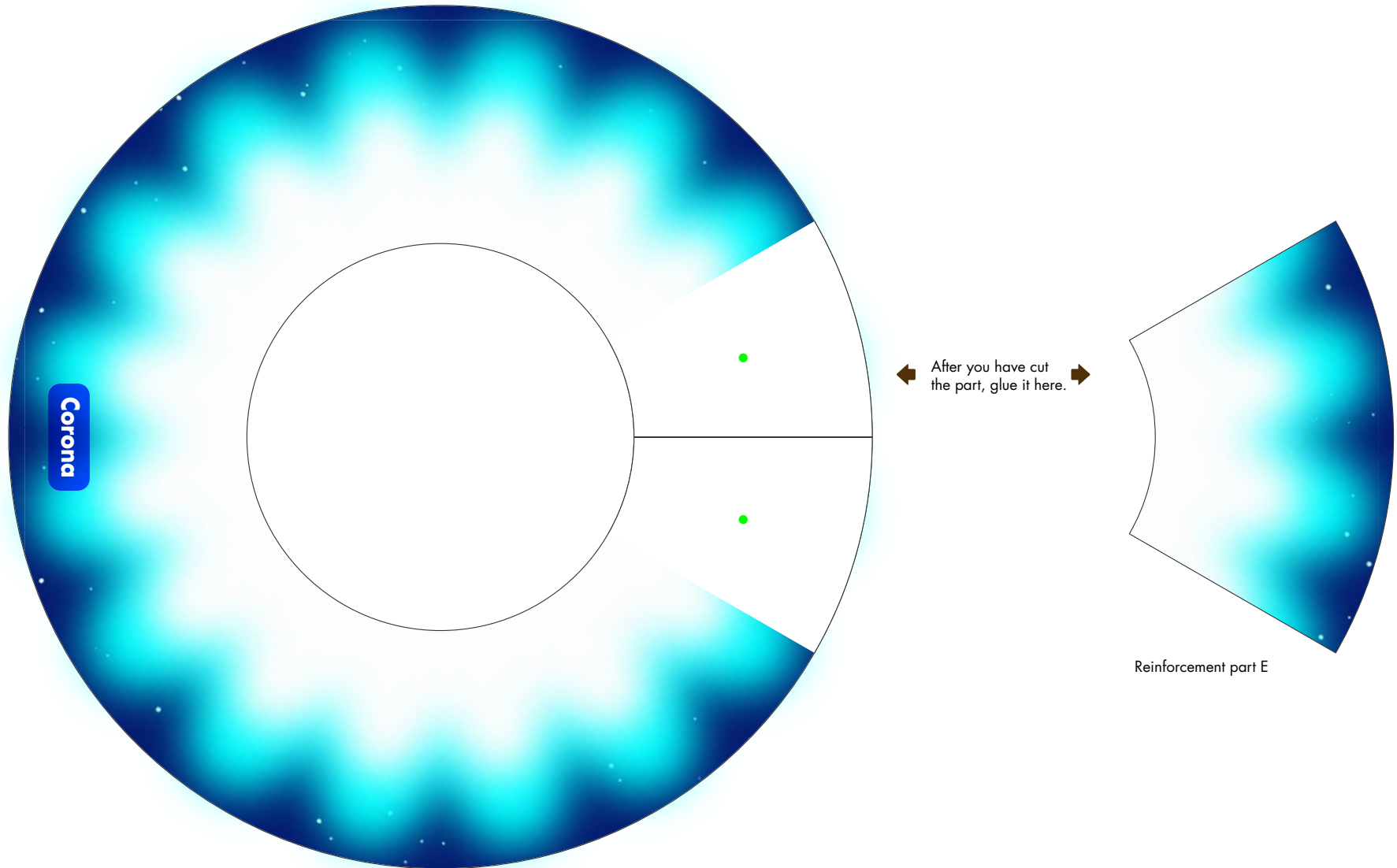


Base



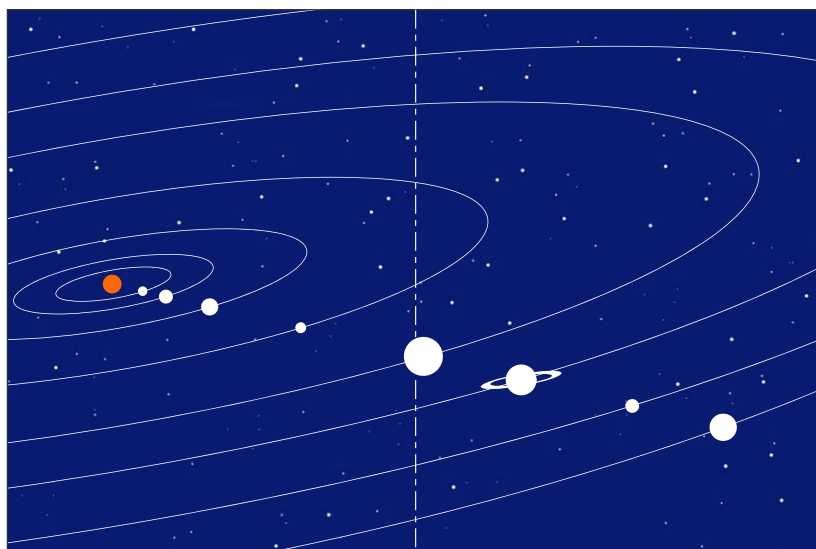


Base



## Miniature book

1-1



1-2

## Sun

The Sun was born about 4.6 billion years ago, and has been shining over and nurturing us and all lives on the earth. The major difference in the structure between the Sun and the Earth or the moon is that it is entirely composed of high temperature gases. The Sun is structured with roughly three layers of the core, radiate layer and convection layer, and among these three layers, the core, in particular, has the highest temperature and density, and generates the sources of light and heat by nuclear fusion. This generated energy fills

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1

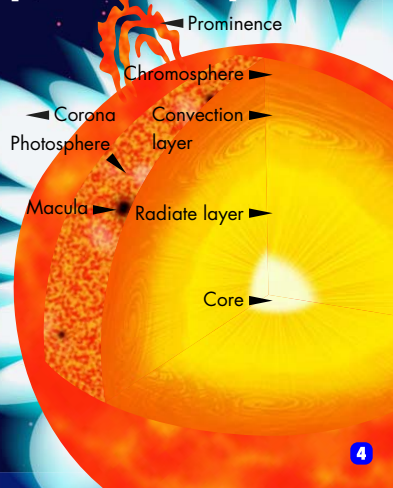
2

1-3

## Data of the Sun

- Diameter: Approx. 1.4 million km (approx. 109 times larger than the earth)
- Mass:  $1.989 \times 10^{30}$  kg (approx. 330,000 times larger than the earth)
- Average density:  $1.41 \text{ g/cm}^3$  (approx. 1/4 of the earth)
- Rotation cycle: Approx. 25 days
- Distance: Approx. 150 million km from the earth
- Core temperature: Approx. 16 million°C
- Temperature on the surface of the photosphere: Approx. 6,000°C
- Temperature on the macula: Approx. 4,000°C
- Temperature of the corona: Approx. 1 million°C
- Apparent stellar magnitude: -26.74, etc.

## [Structure chart]



3

4

1-4

## [Photosphere]

The shining part of the sun's surface that we usually see. The surface temperature is about 6,000°C and the Sun also emits ultraviolet rays.

Chromosphere

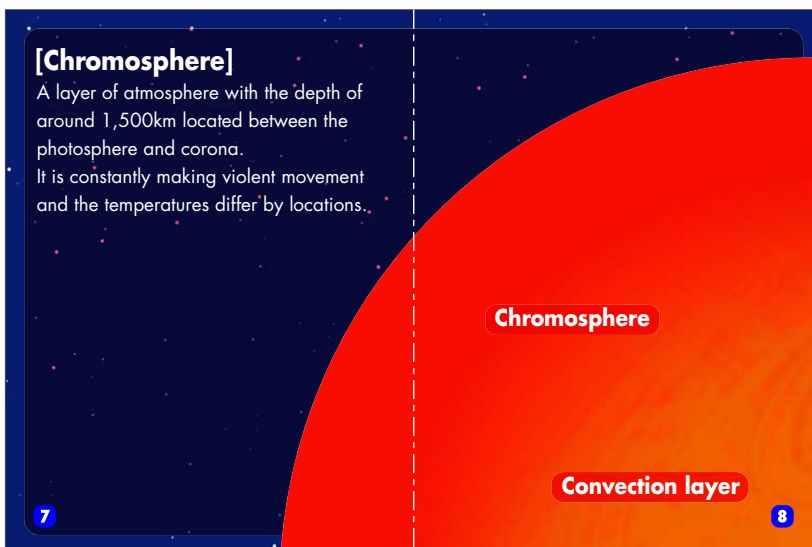
Photosphere

5

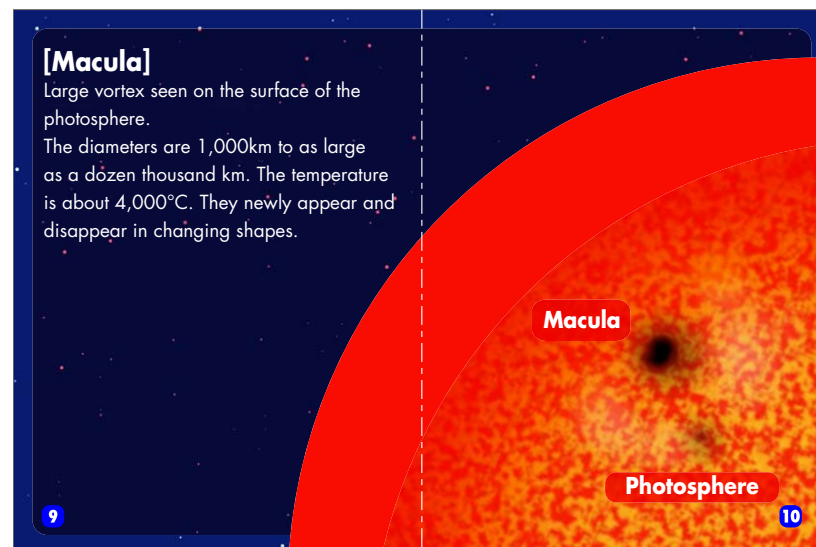
6

## Miniature book

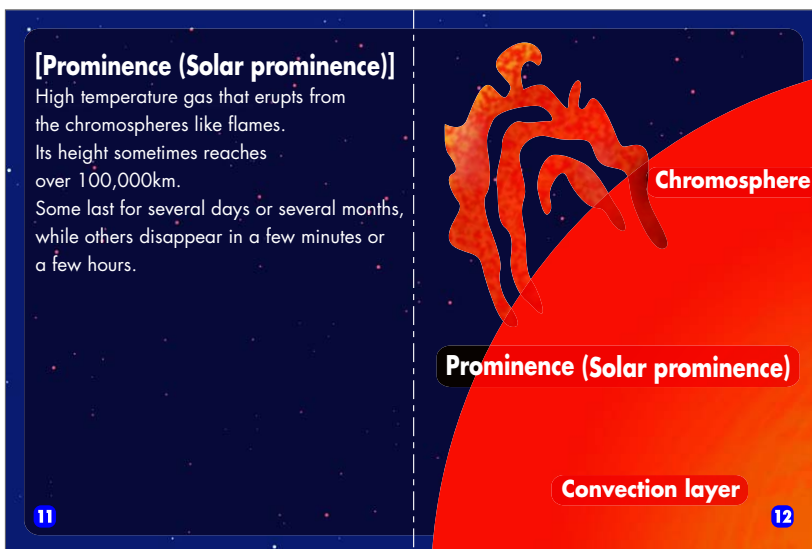
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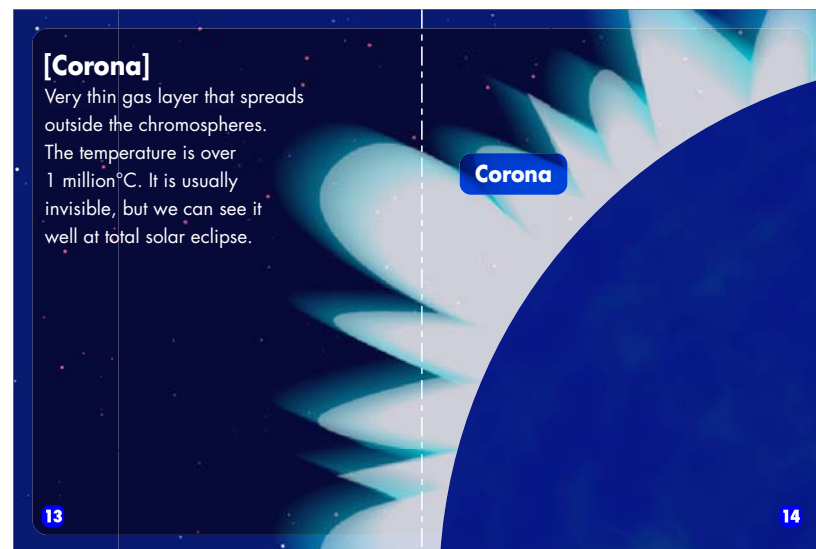
1-6



1-7

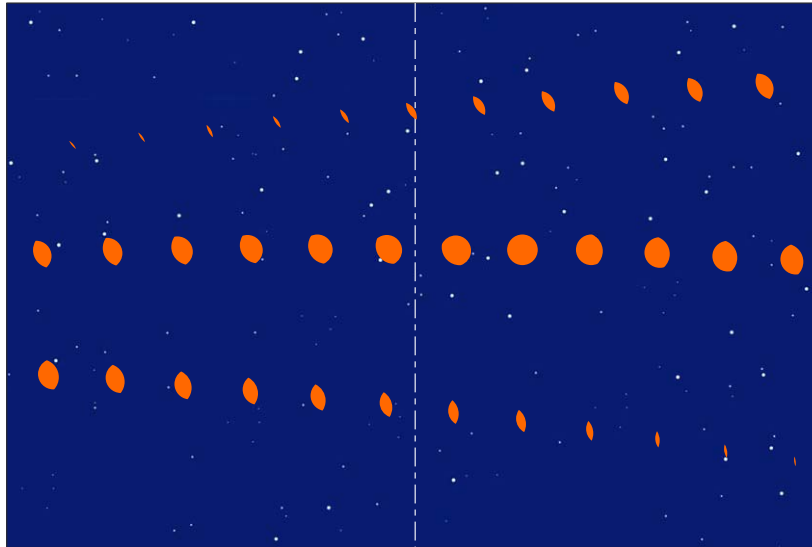


1-8



## Miniature book

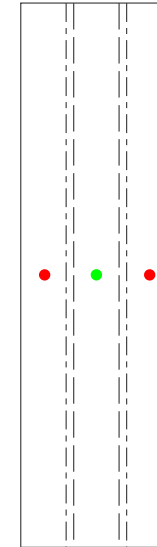
1-9



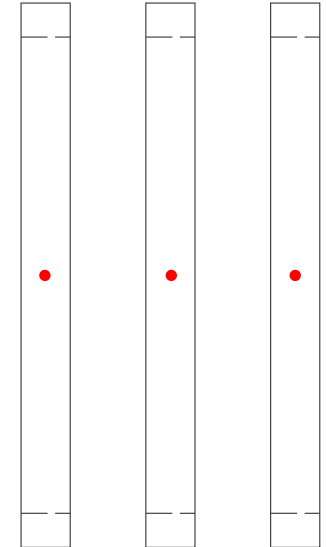
Reinforcement part F



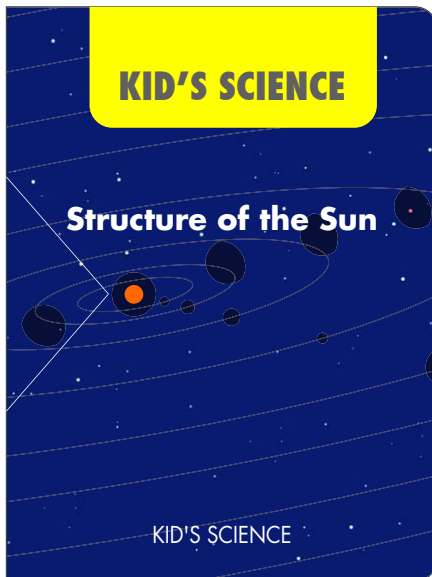
Reinforcement part G



Reinforcement part K x3



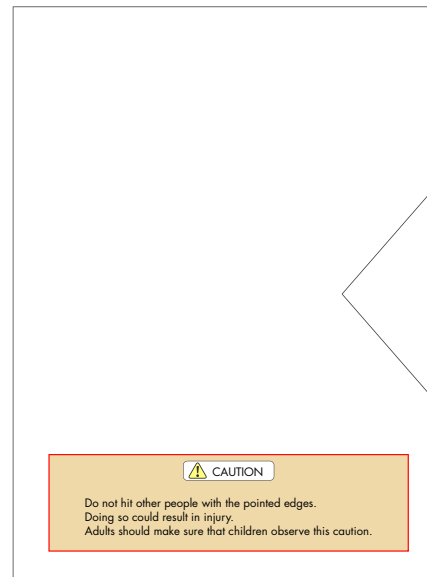
Front part A



Front part B

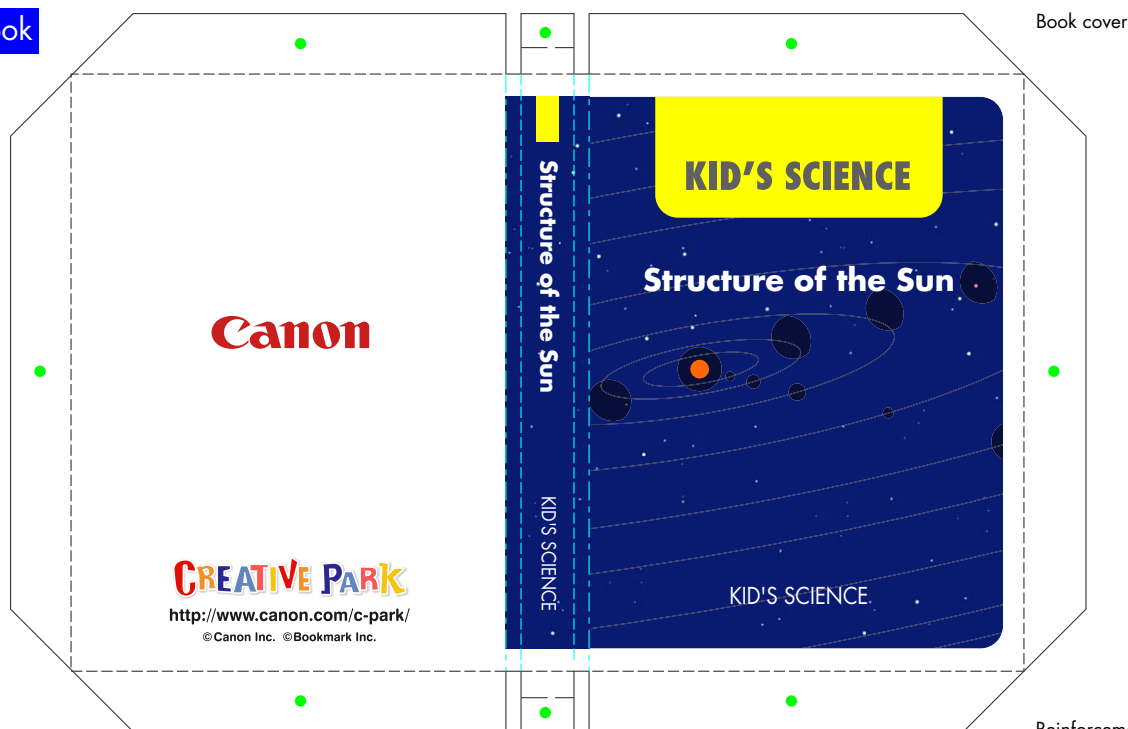


Front part C



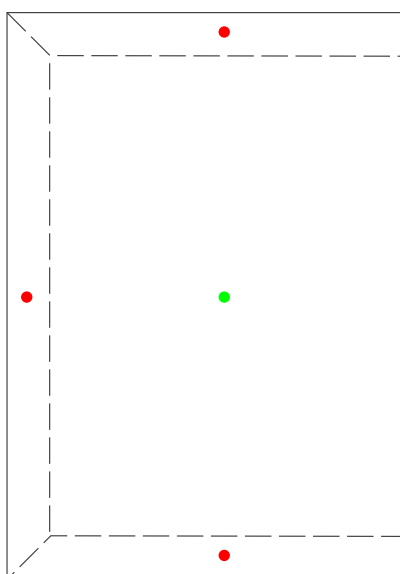
Do not hit other people with the pointed edges.  
Doing so could result in injury.  
Adults should make sure that children observe this caution.

Miniature book

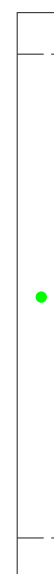


Book cover

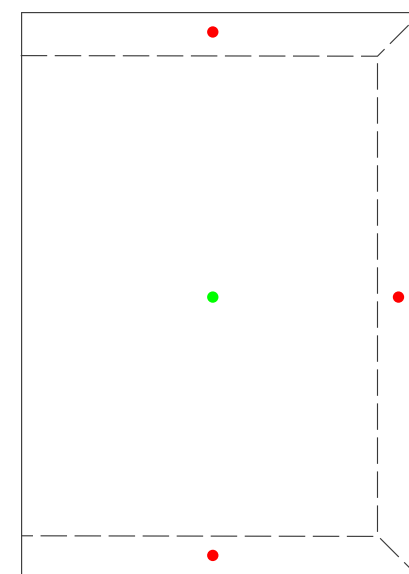
Reinforcement part H



Reinforcement part I



Reinforcement part J





## Miniature book Case

