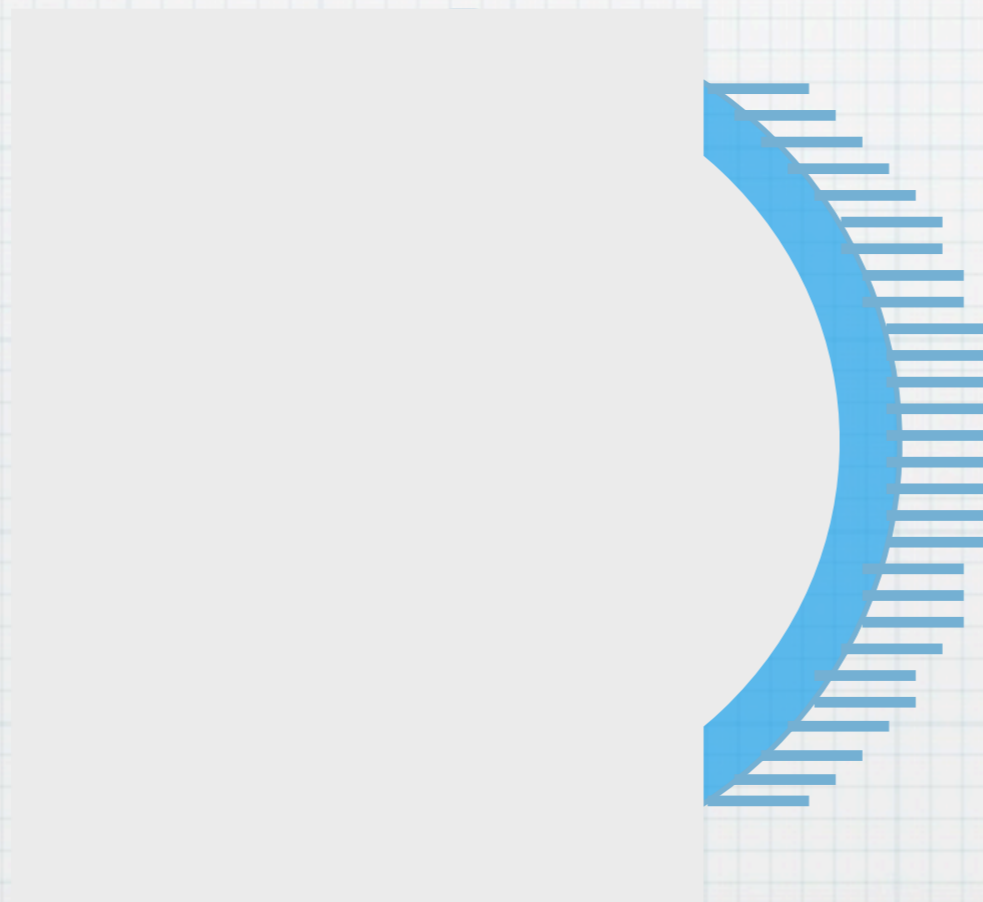


Locating Images in Curved Mirrors

Part 1: Intro and Concave Mirrors

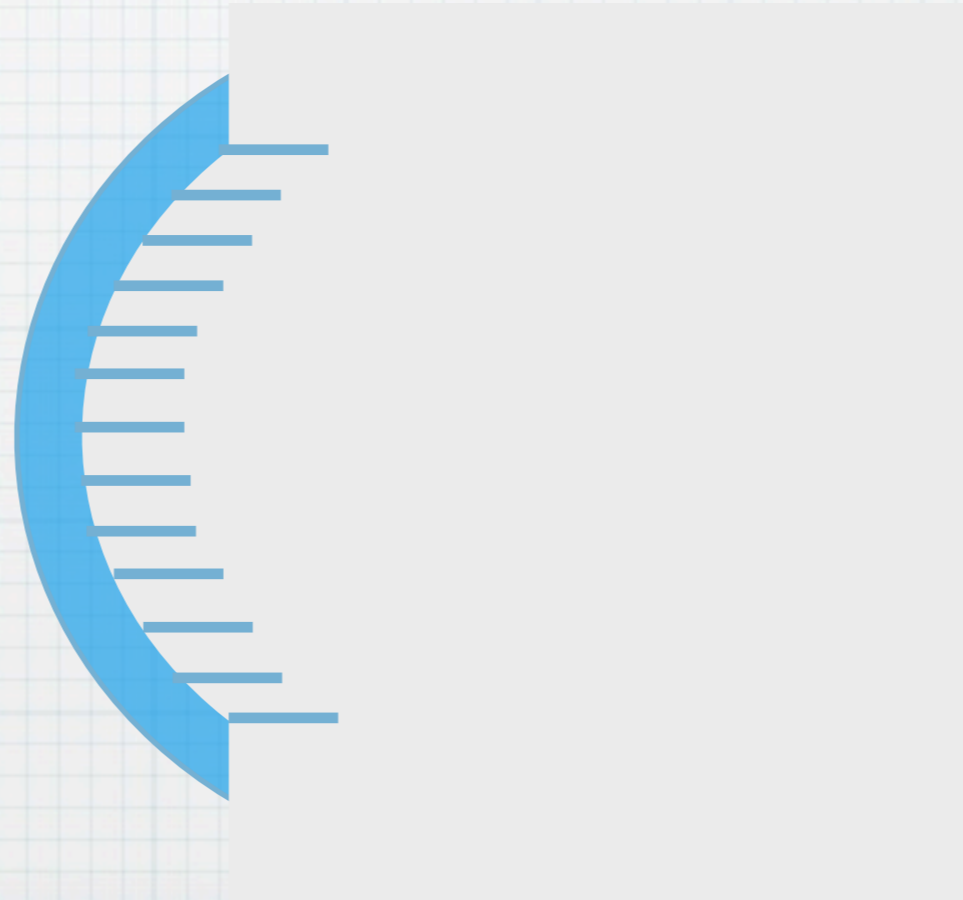
Types of Mirrors

- * Concave (Converging) mirror - the centre of the mirror bulges away from you (eg. makeup mirror, car headlight, flashlight)



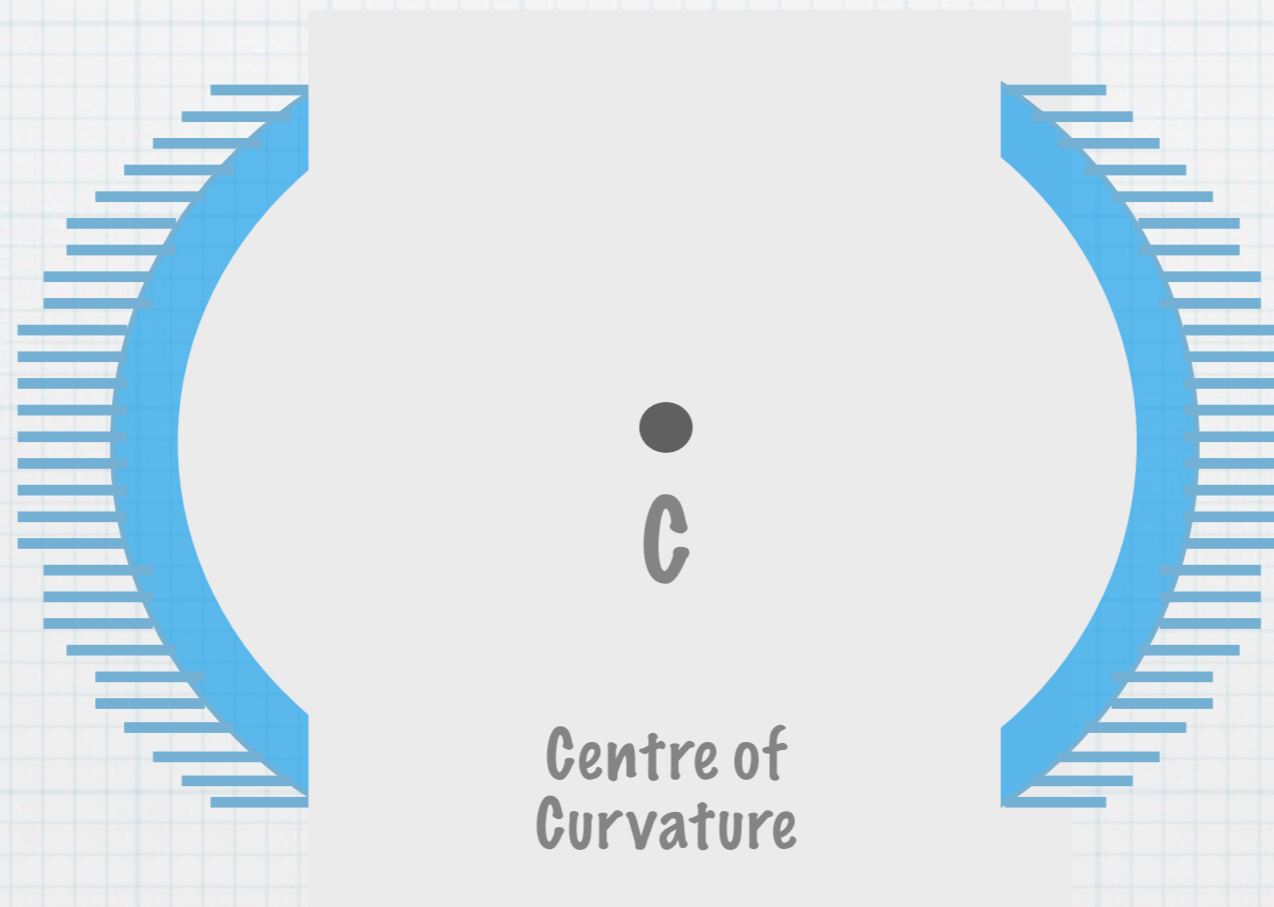
Types of Mirrors

- * Convex (Diverging) mirror - the centre of the mirror bulges toward you (eg. security mirror in a store or side-view mirror on a vehicle)

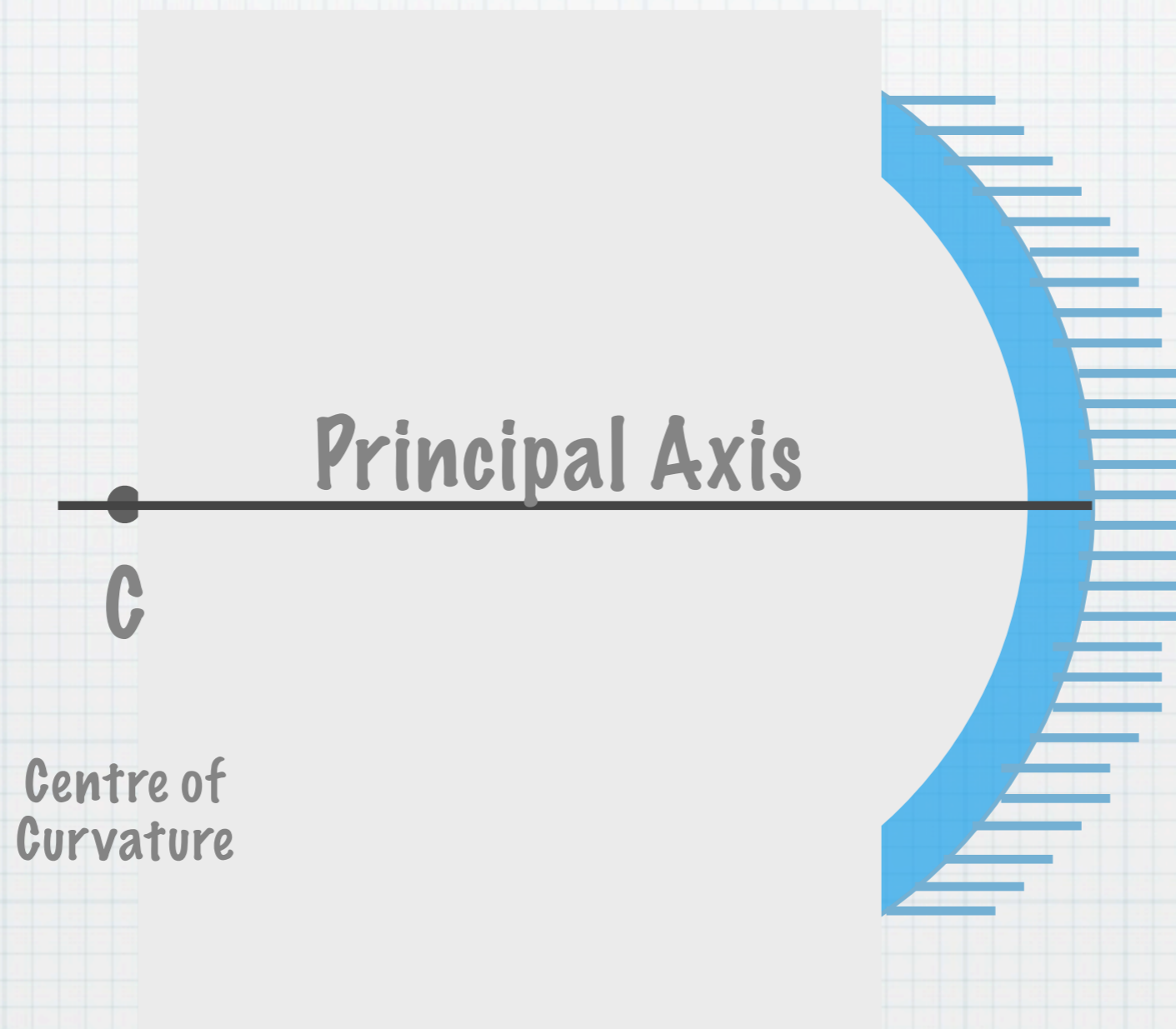


* Centre of Curvature - centre of sphere used to make the mirror.

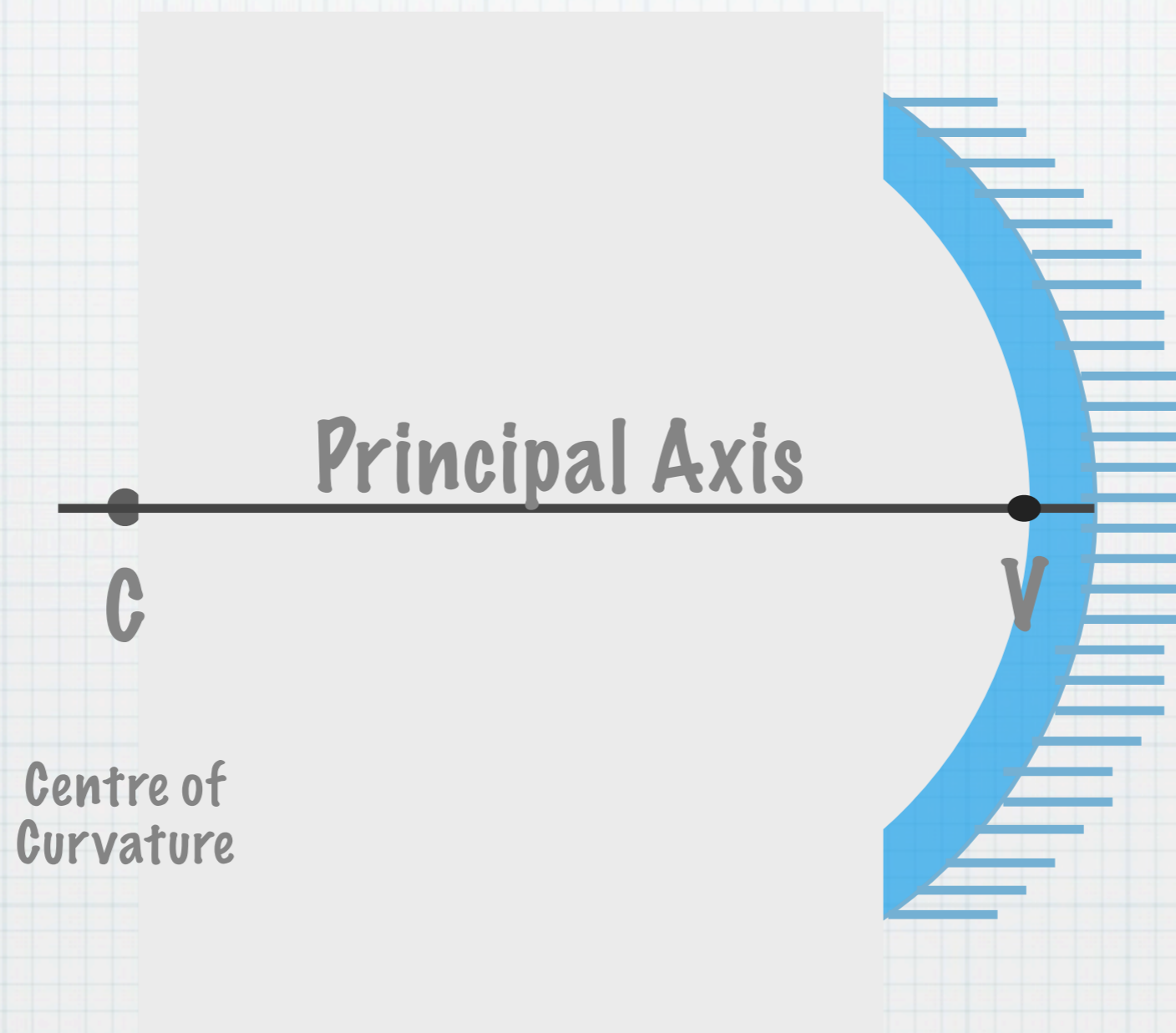
* Labelled as C



* Principal Axis - the line through the centre of curvature to the midpoint of the mirror



- * Vertex - the point at which the principal axis intersects the mirror.



Concave Mirrors

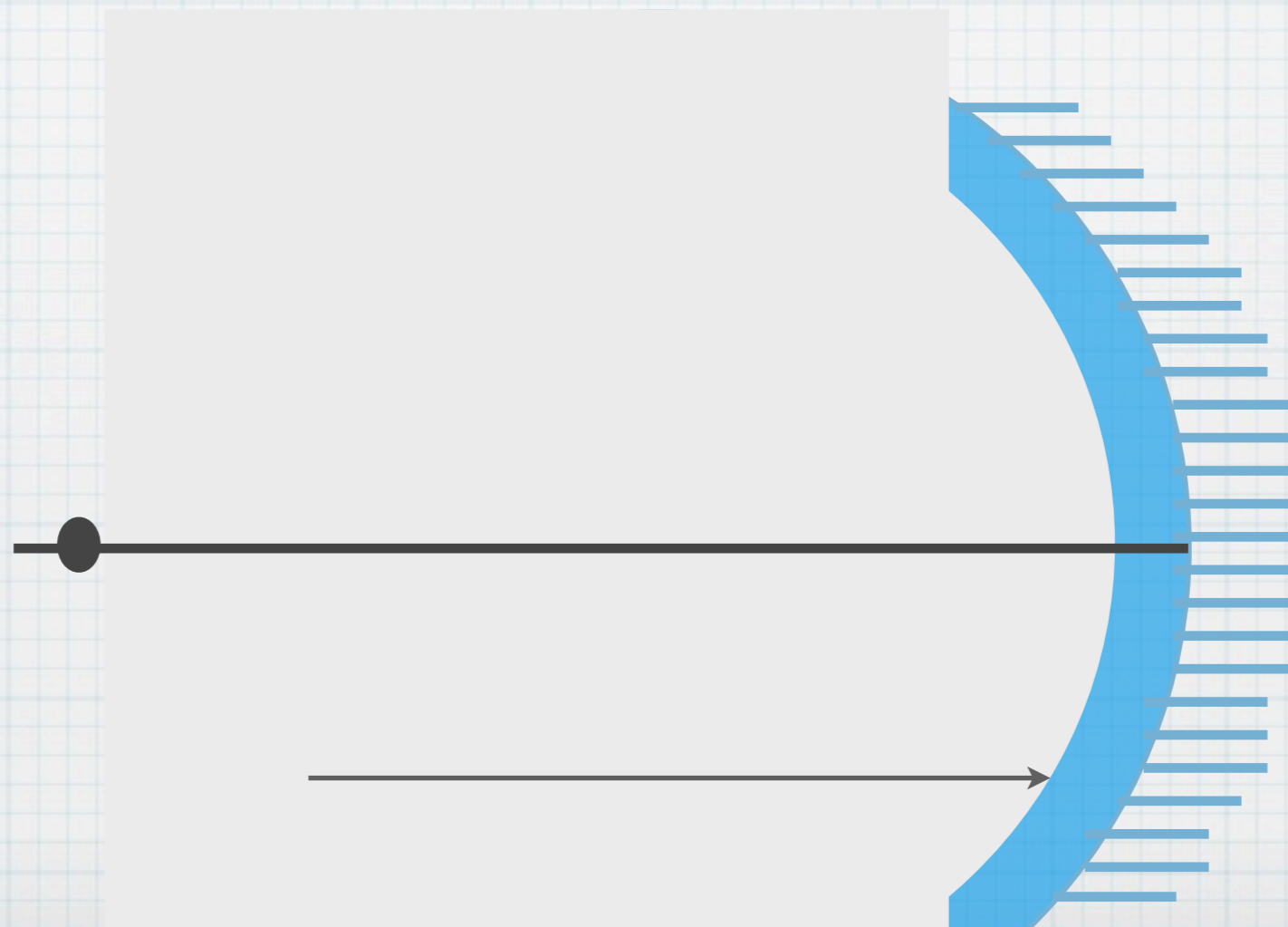
Locating the Focus

- * Any light rays that are parallel to the principal axis will reflect off the mirror through a single point - called the focus.



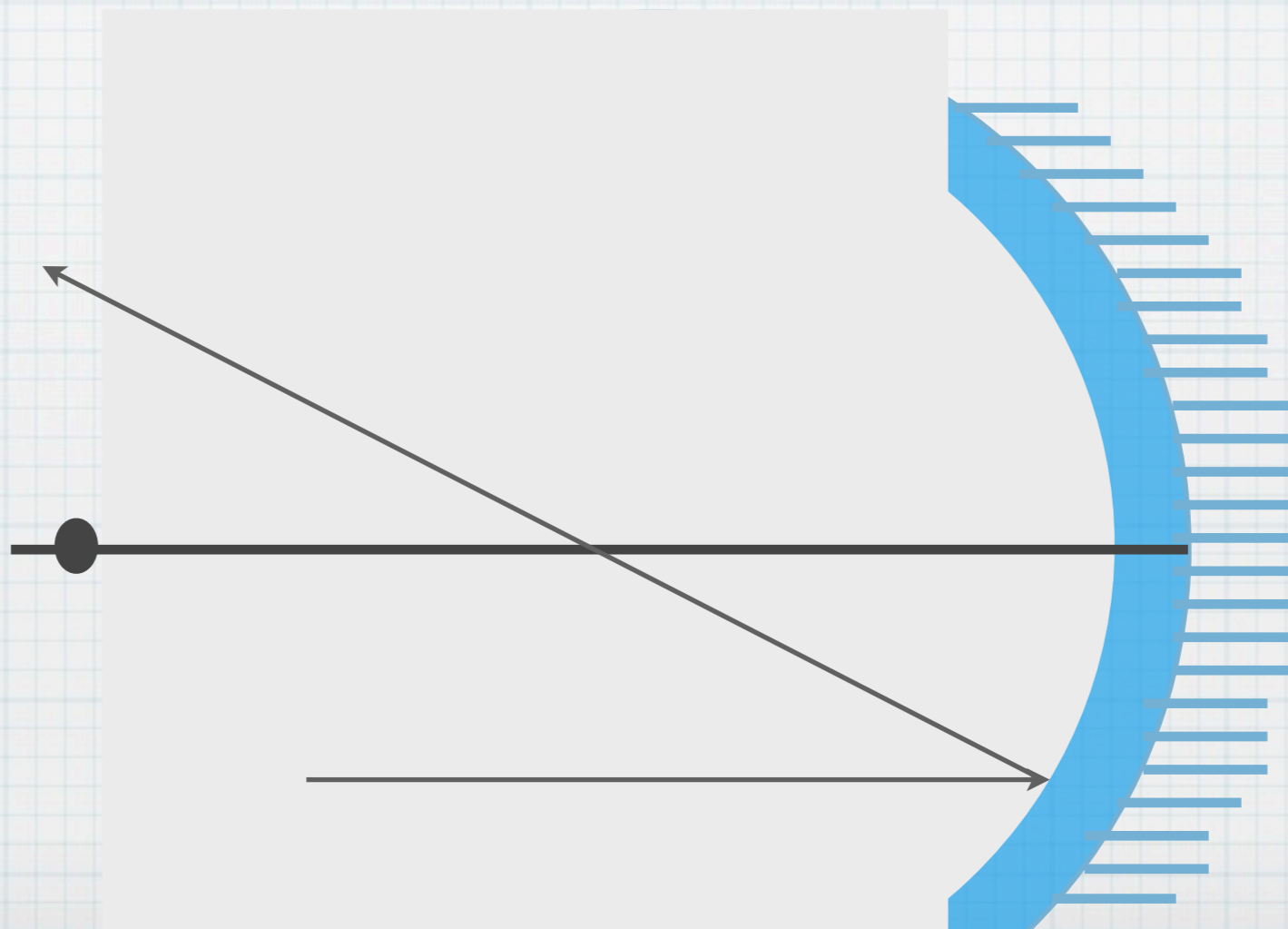
Locating the Focus

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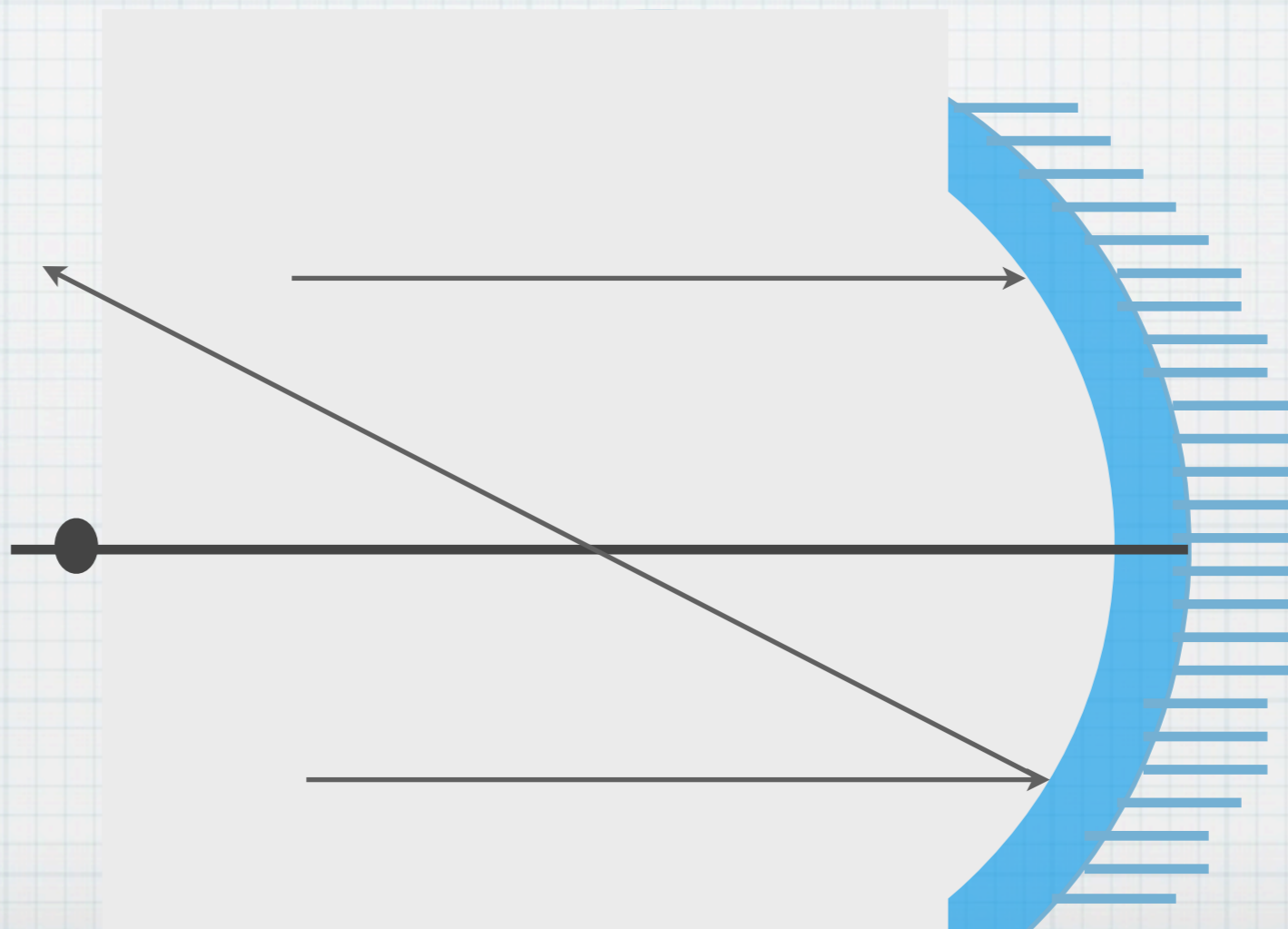
Locating the Focus

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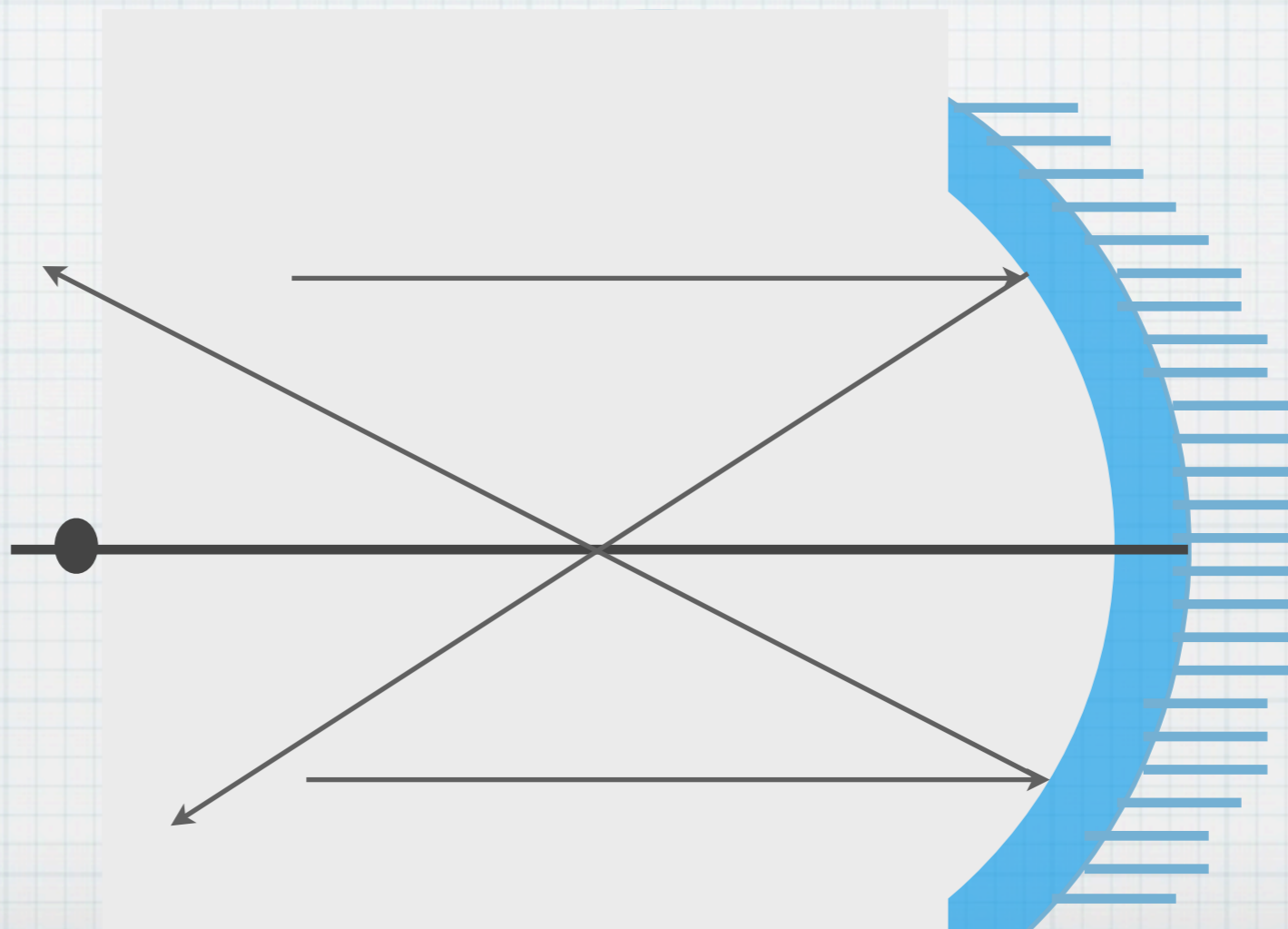
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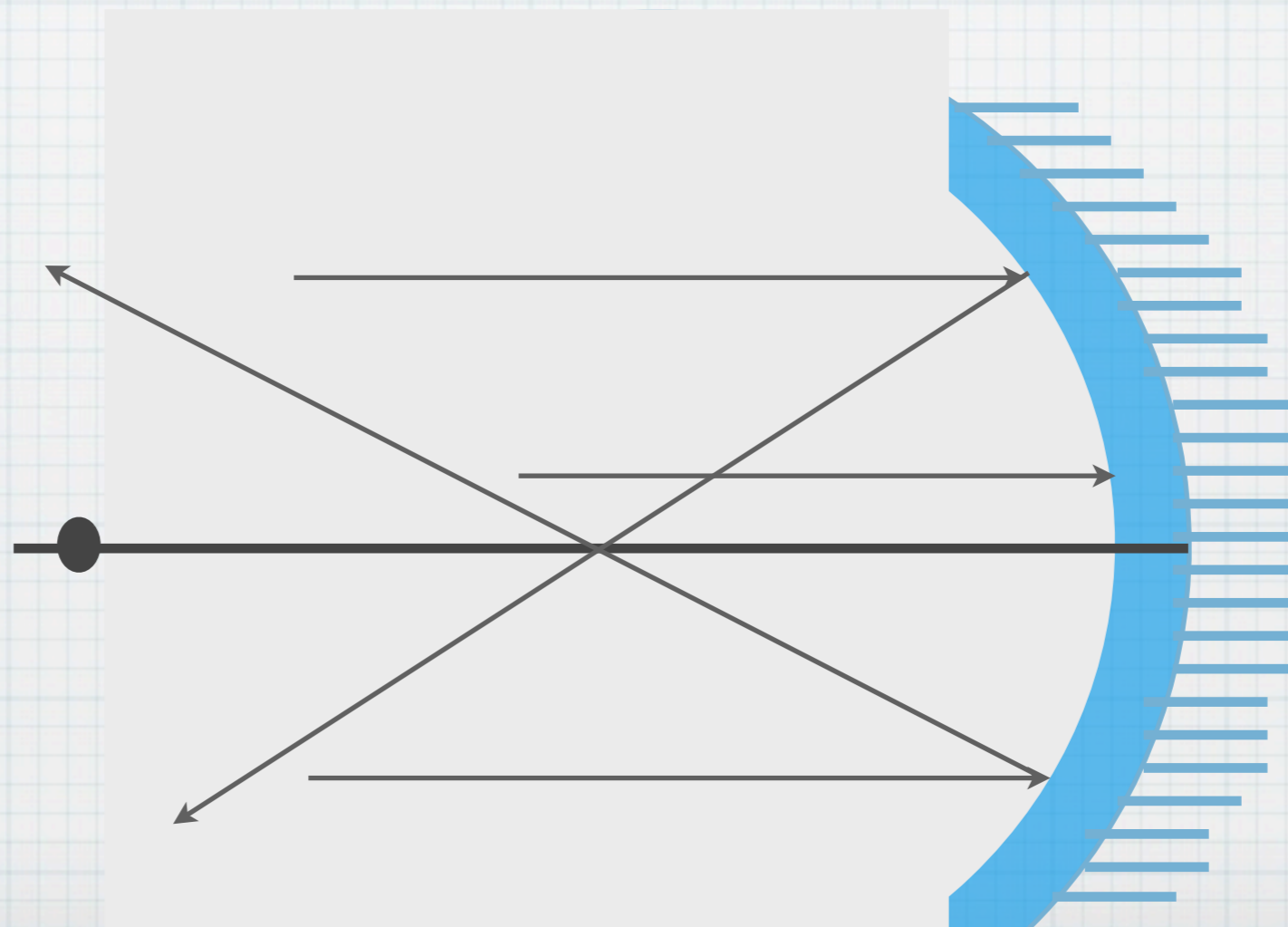
Locating the Focus

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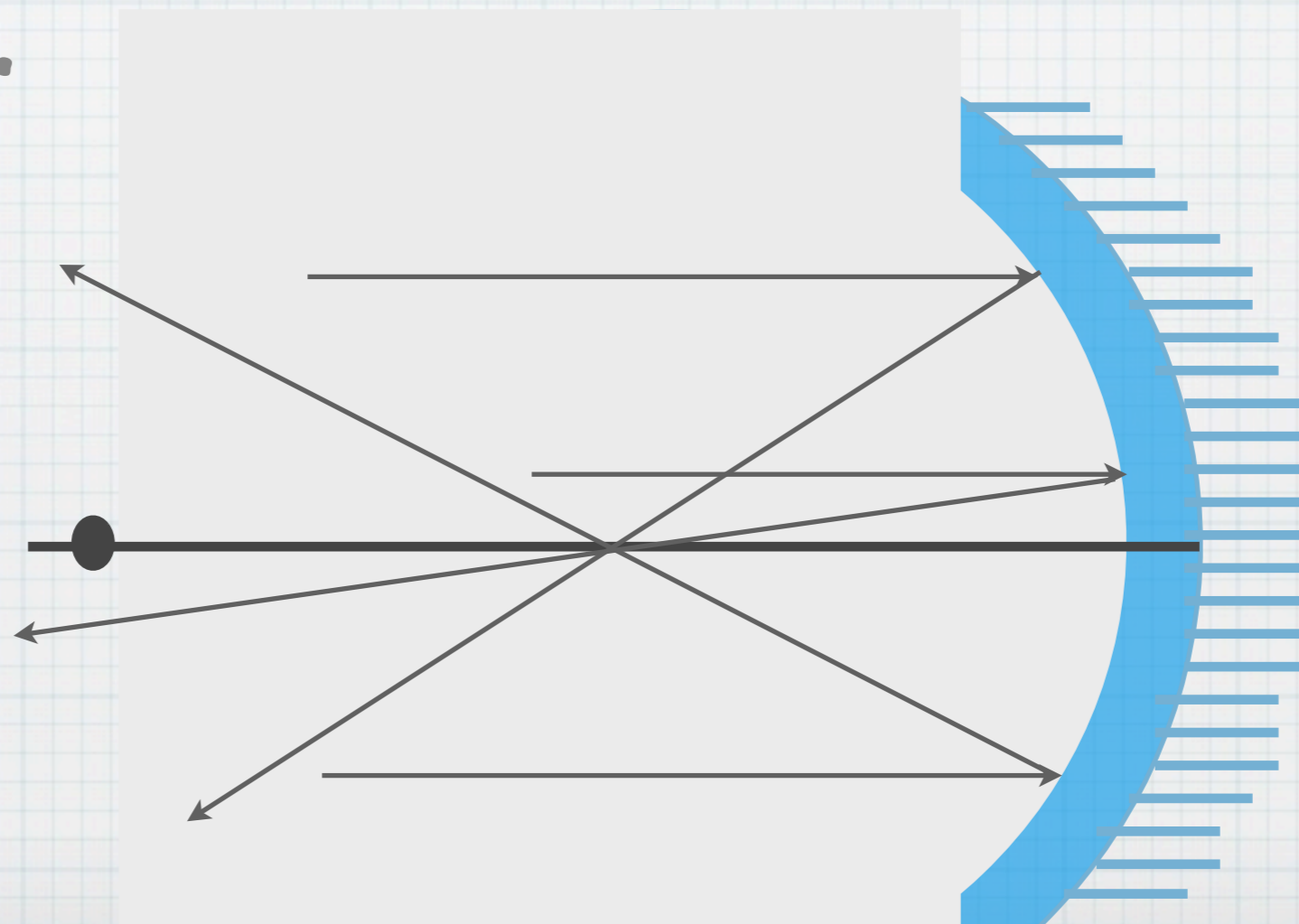
Locating the Focus

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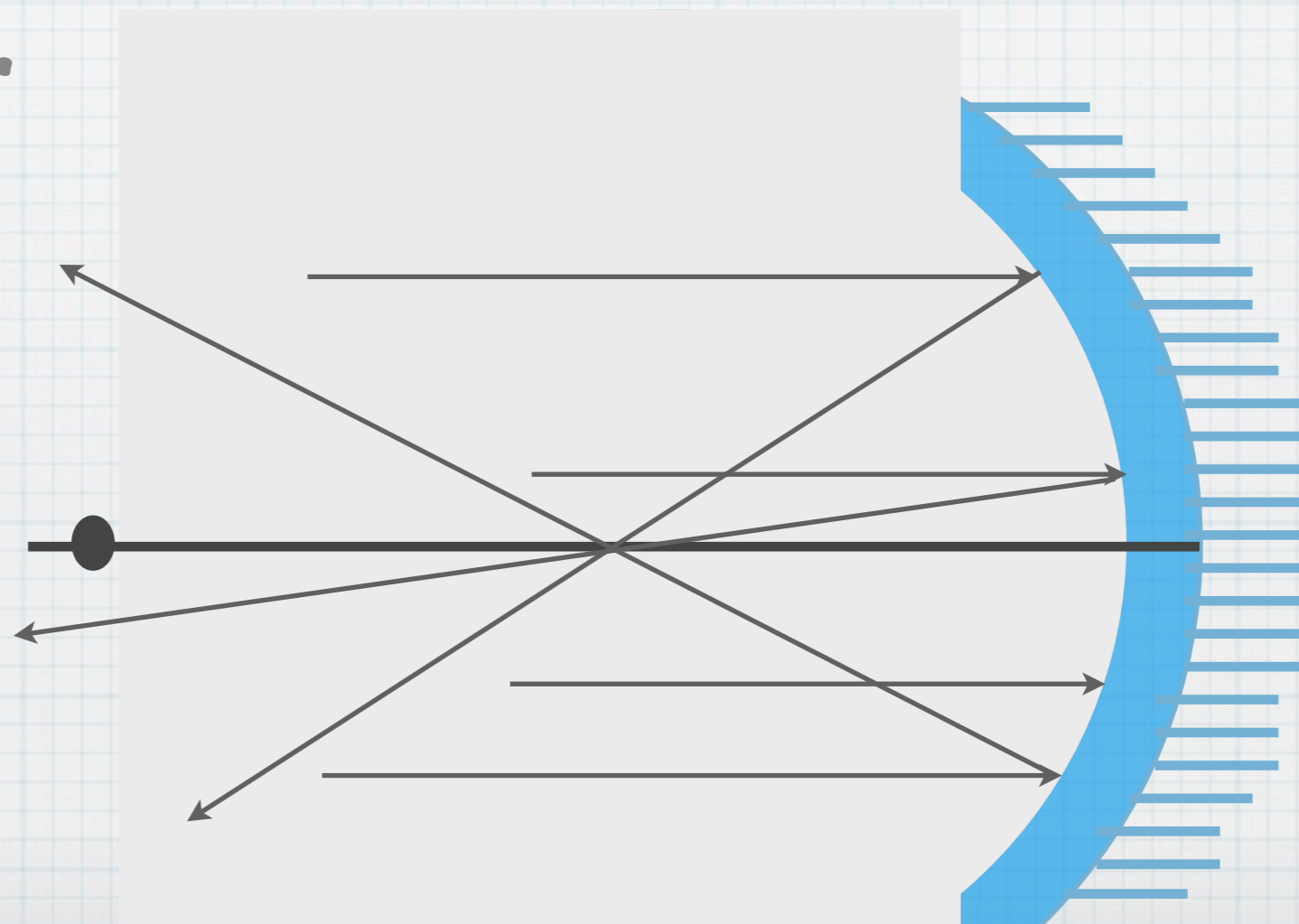
Locating the Focus

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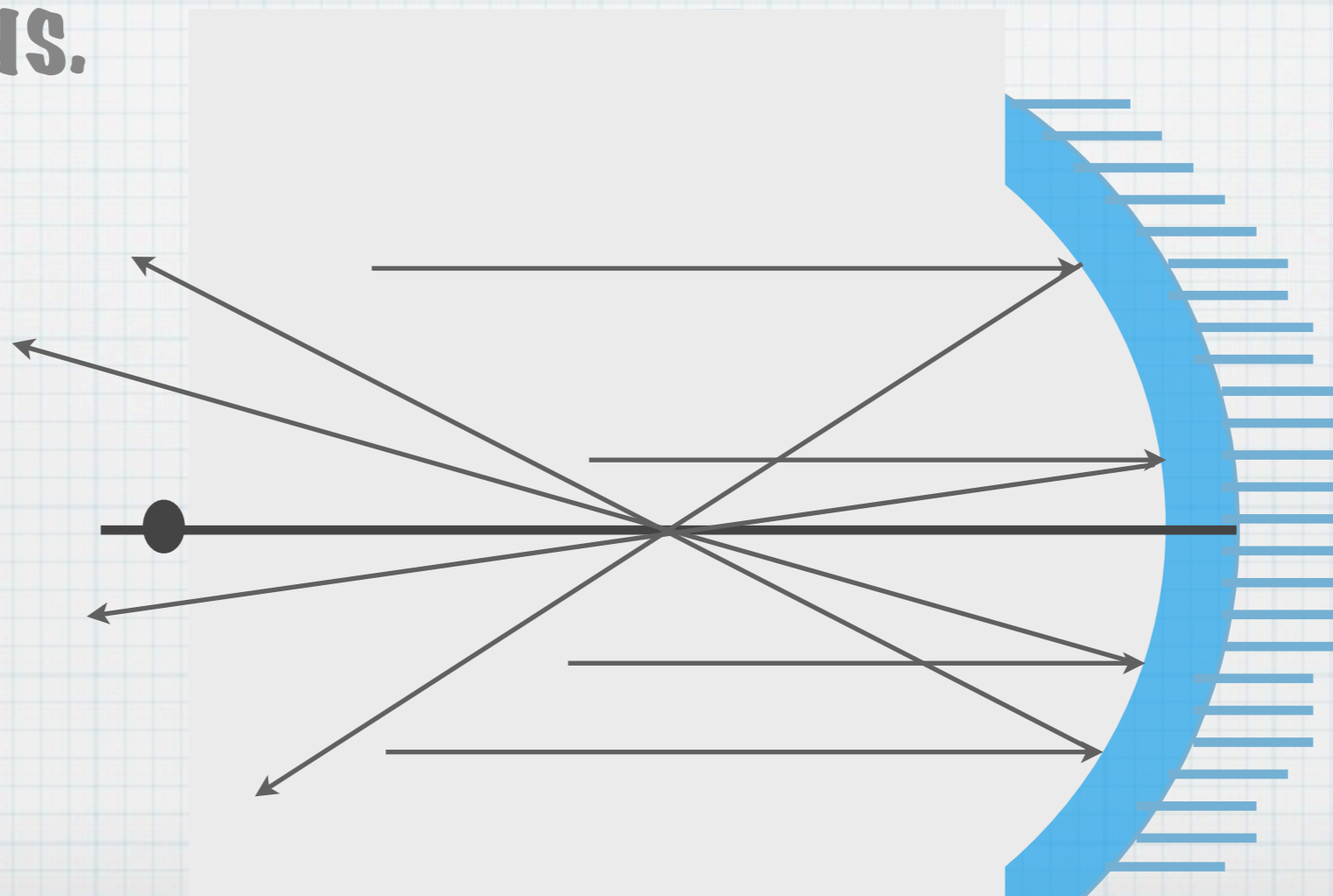
Locating the Focus

- * Any light rays that are parallel to the principal axis will reflect off the mirror through a single point - called the focus.

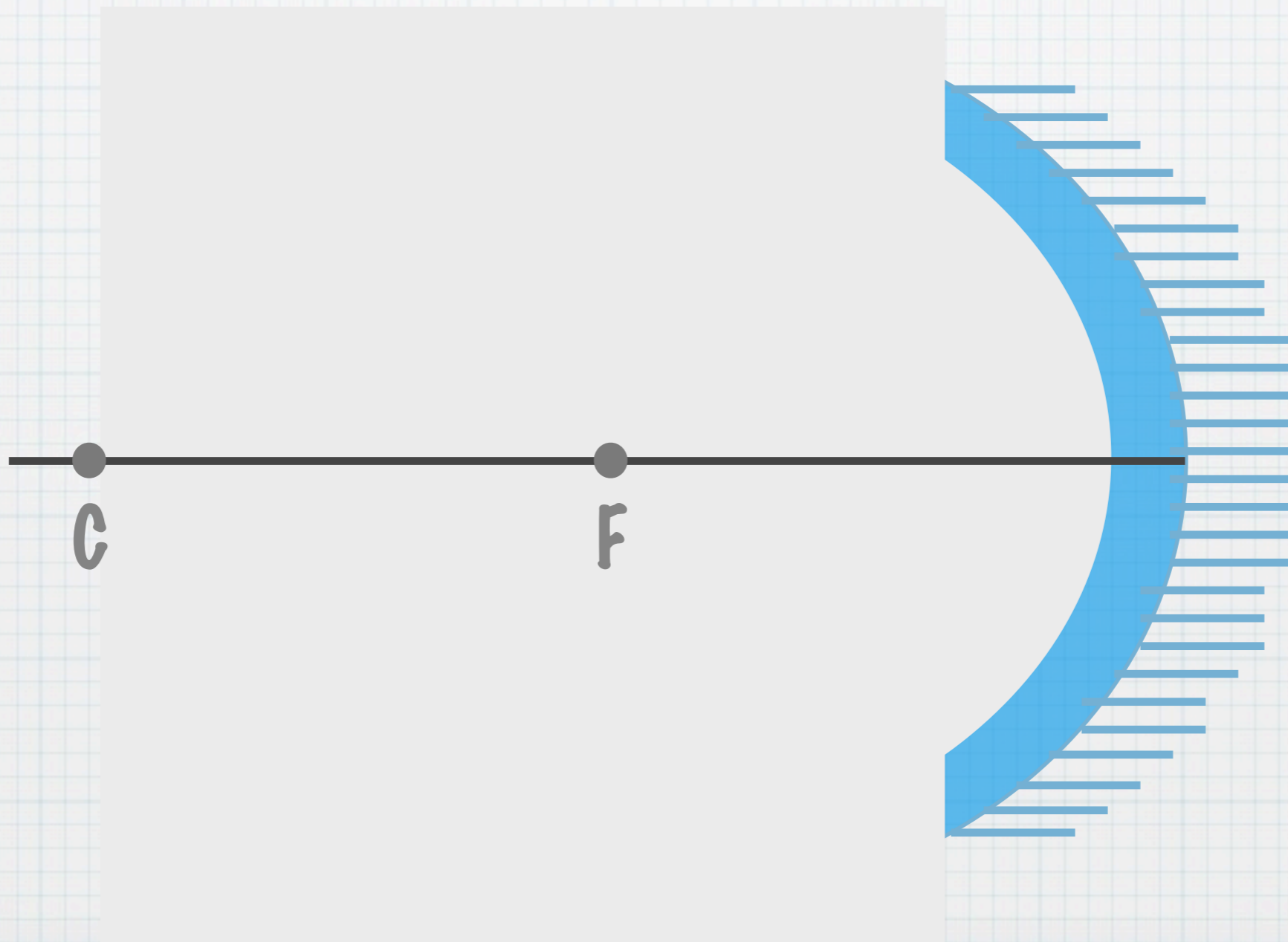


Locating the Focus

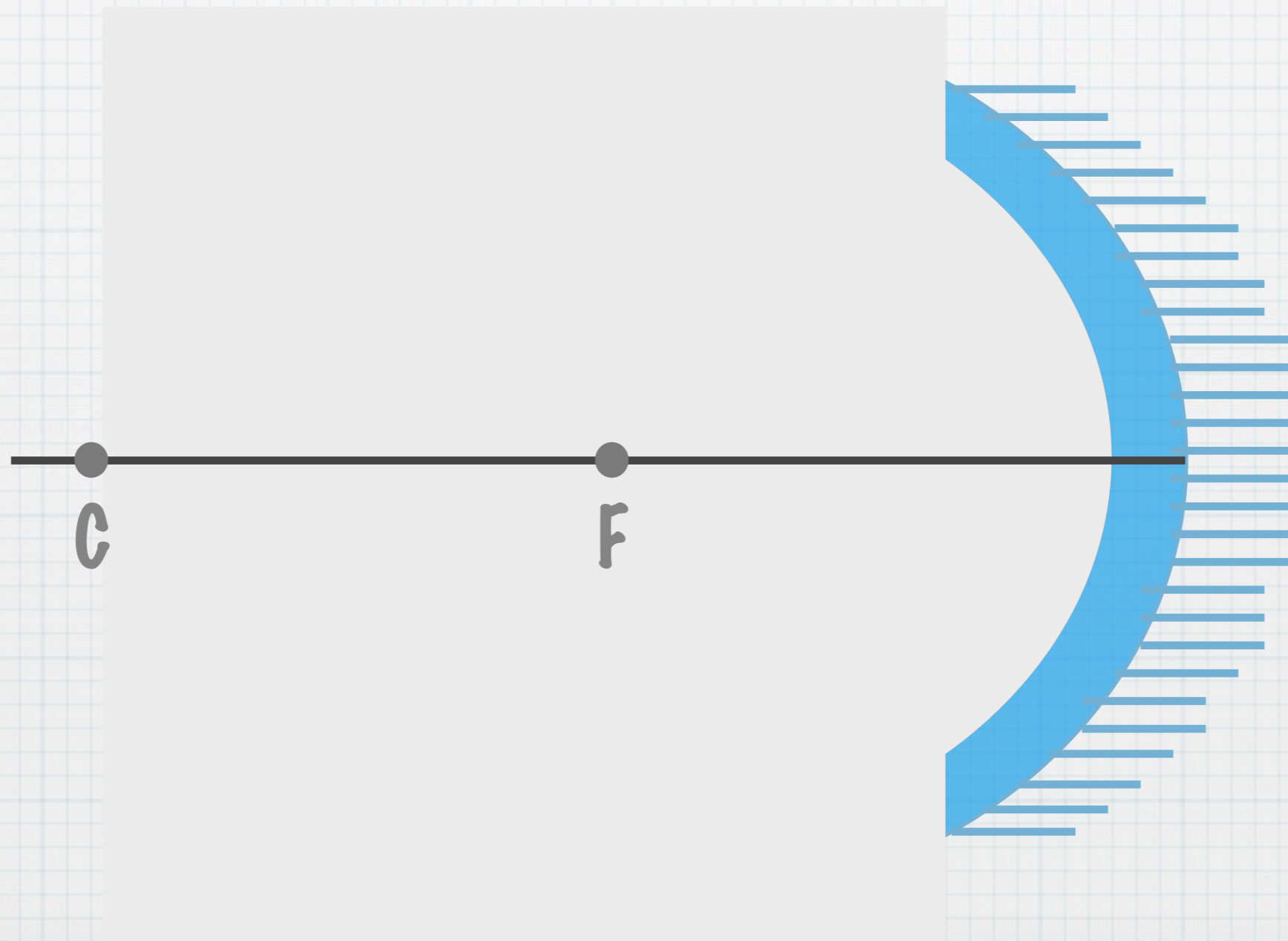
- * Any light rays that are parallel to the principal axis will reflect off the mirror through a single point - called the focus.



- * The focus is always halfway between the centre of curvature and the mirror.

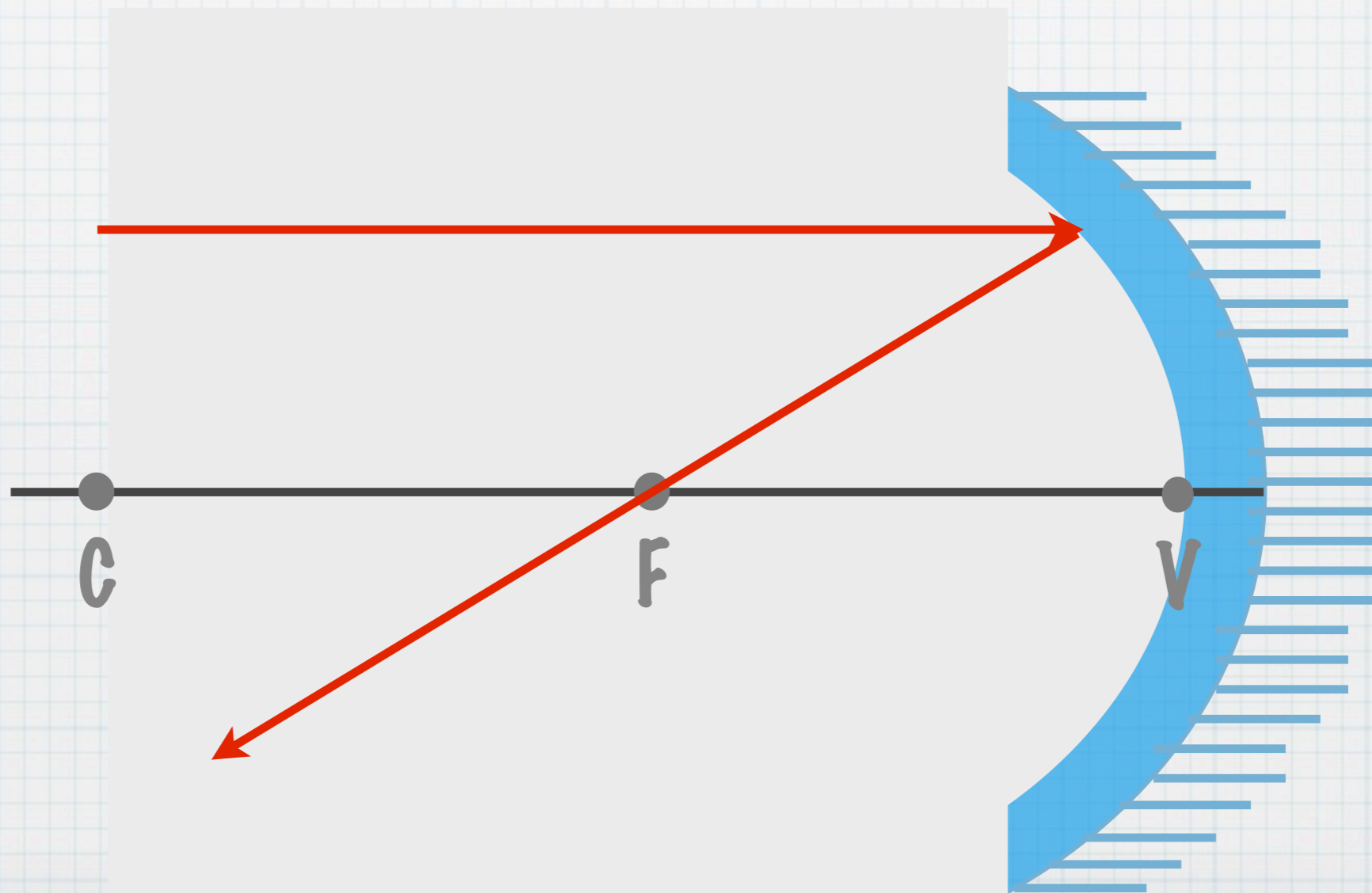


- * Because a concave mirror focuses parallel rays at F, this type of mirror is also called a converging mirror.



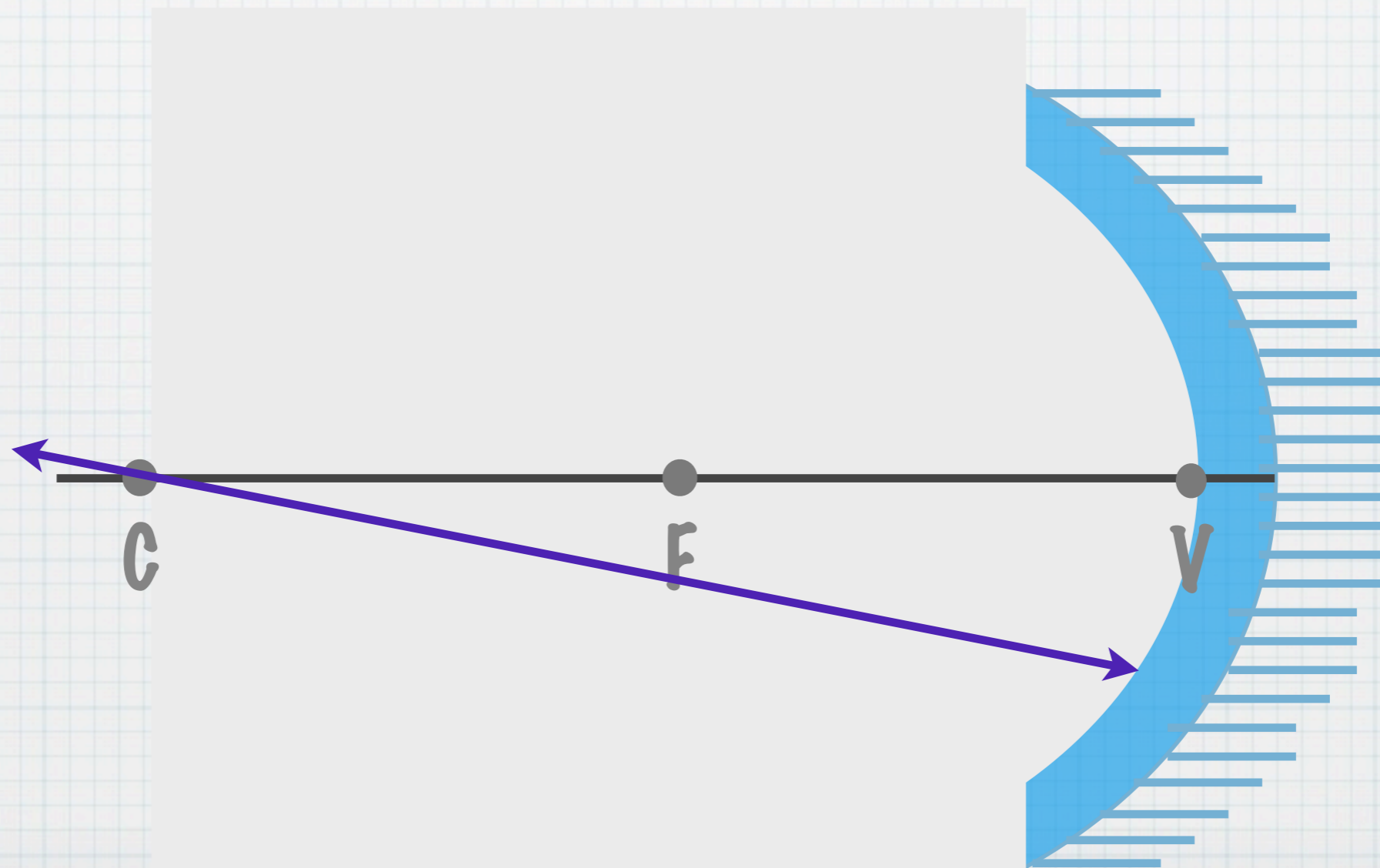
Incident Ray Rules

- * 1) A light ray parallel to the principal axis is reflected through the focus.



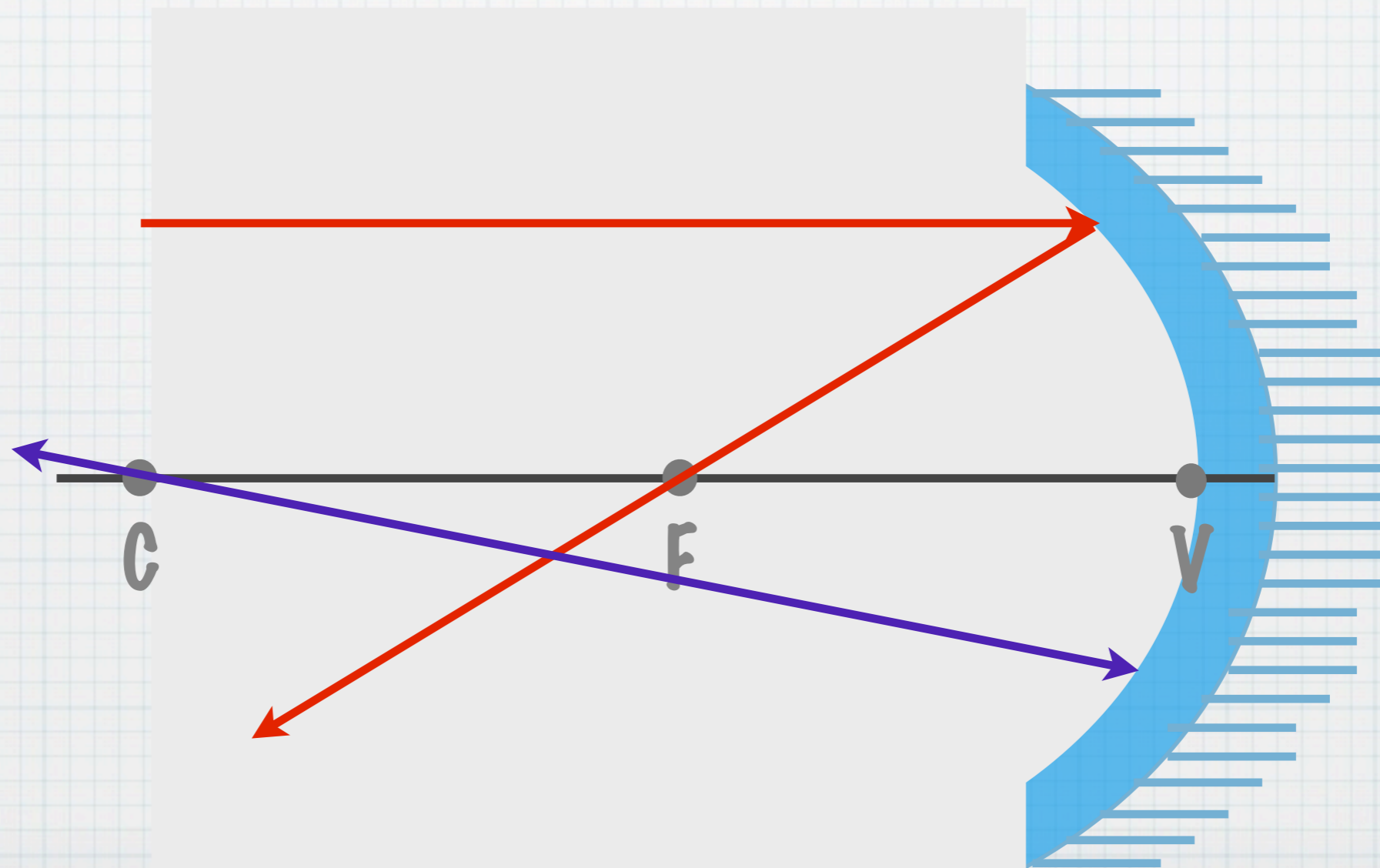
Incident Ray Rules

- * 2) A light ray through C is reflected back onto itself.



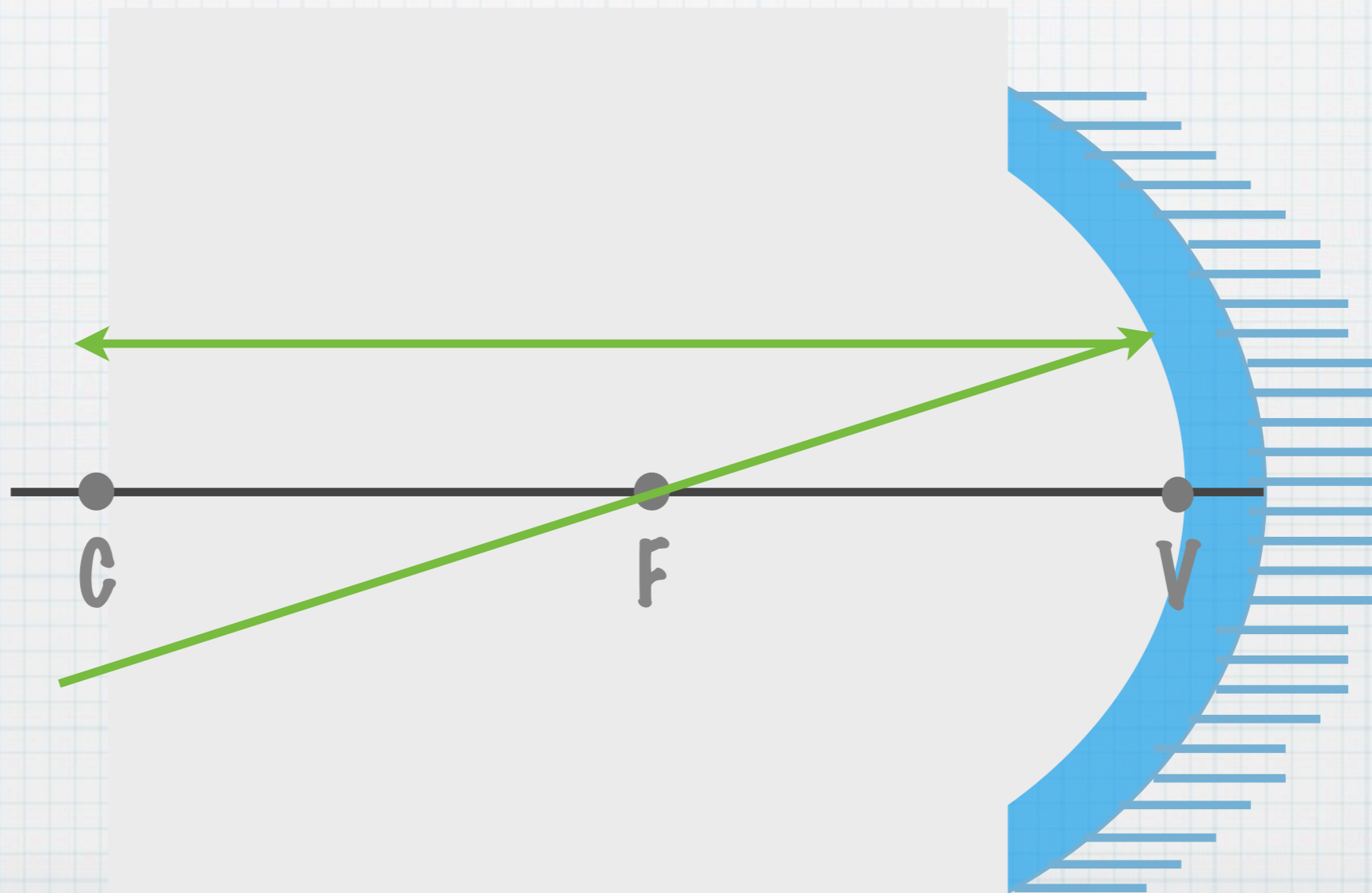
Incident Ray Rules

- * 2) A light ray through C is reflected back onto itself.



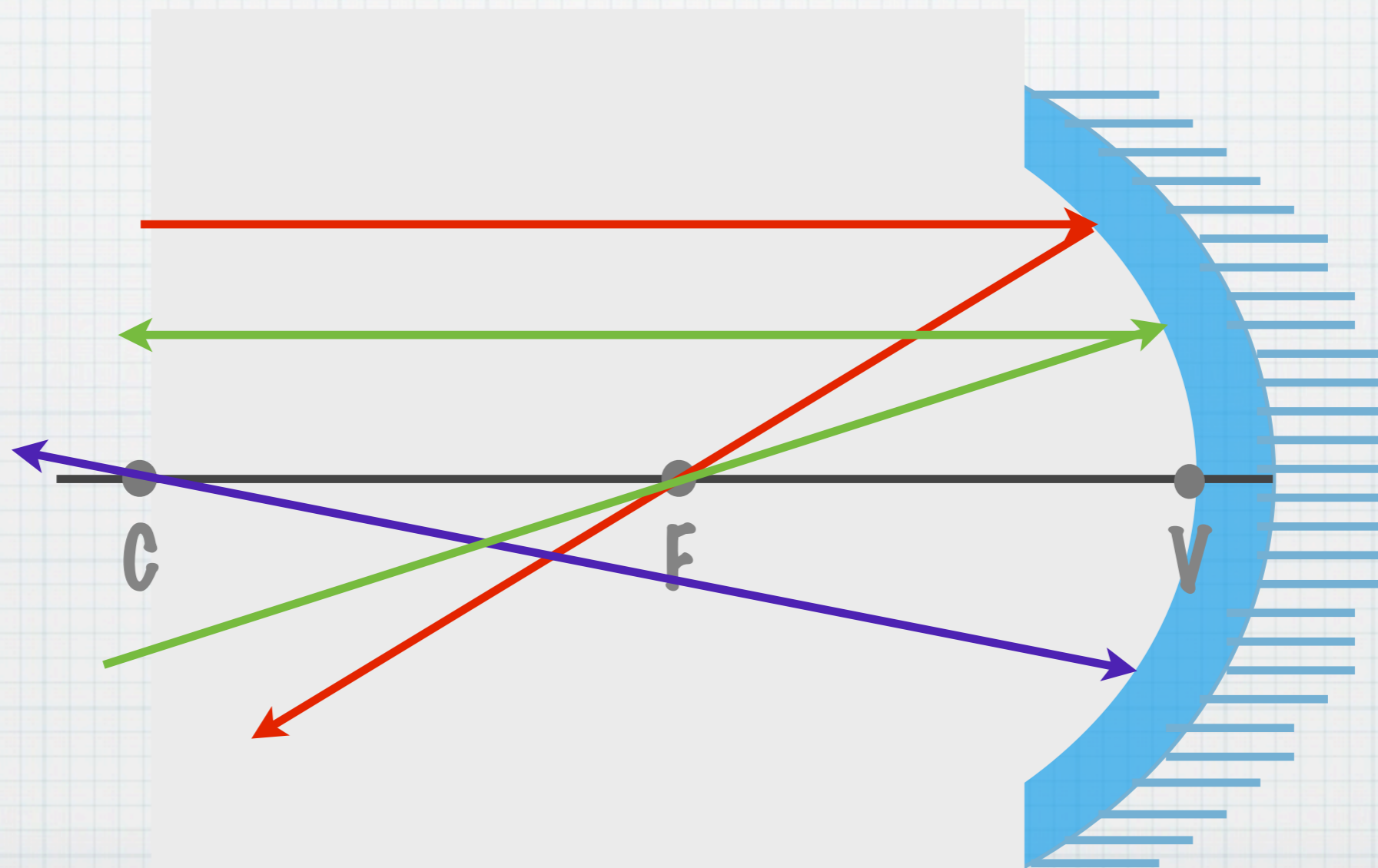
Incident Ray Rules

- * 3) A ray through F will reflect parallel to the principal axis.



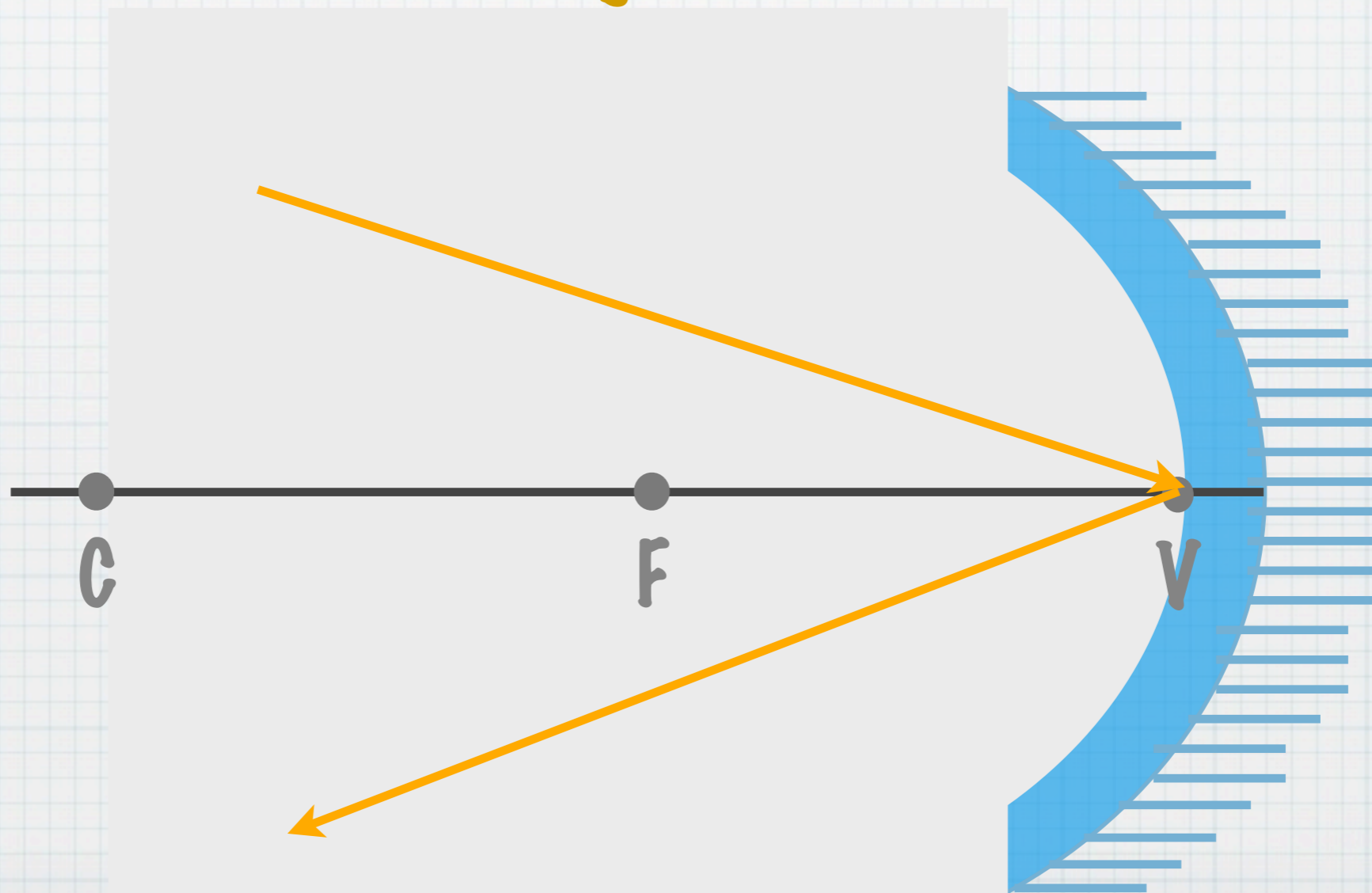
Incident Ray Rules

- * 3) A ray through F will reflect parallel to the principal axis.



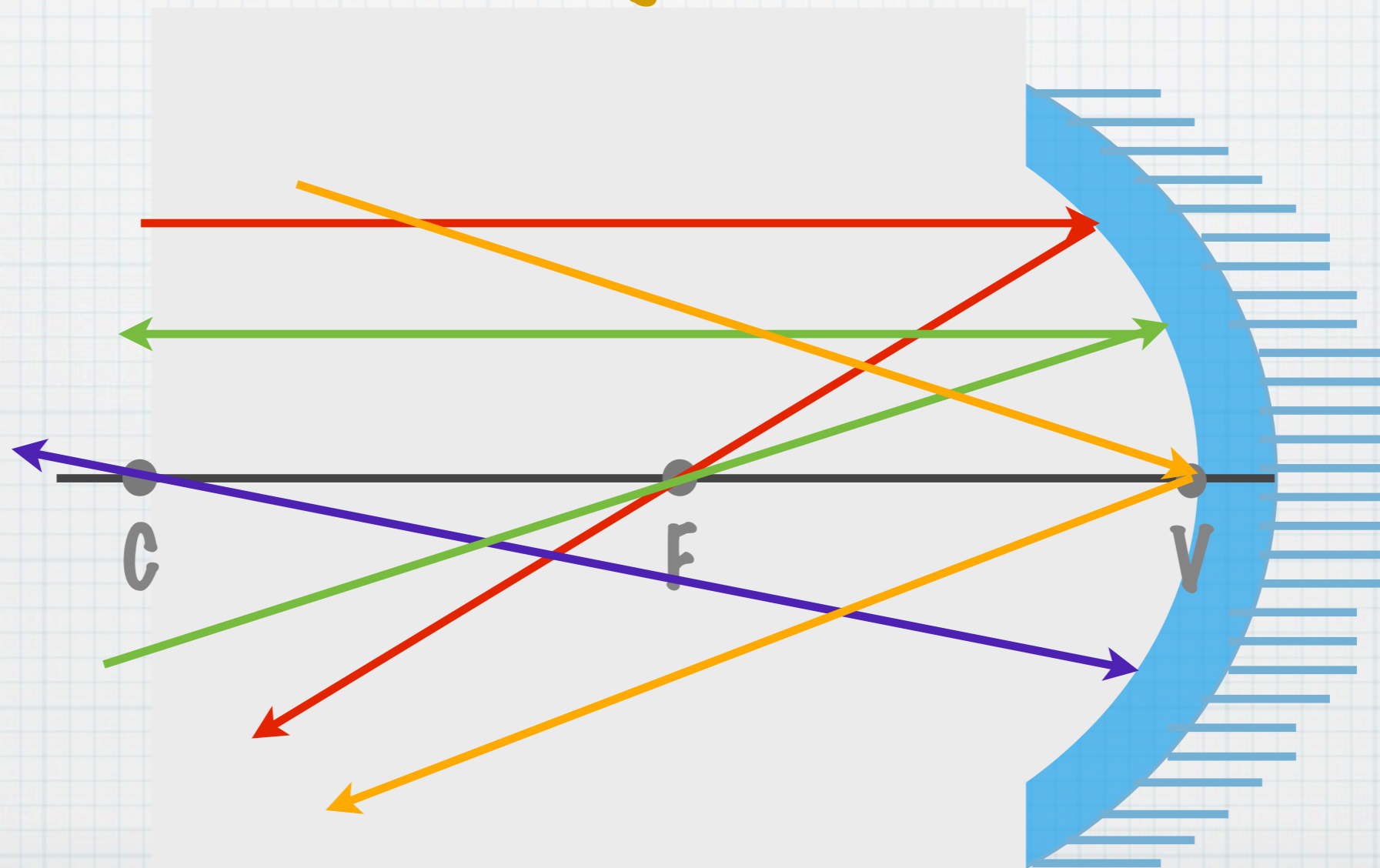
Incident Ray Rules

- * 4) A ray aimed at the vertex will follow the law of reflection where the angle of incidence = the angle of reflection



Incident Ray Rules

- * 4) A ray aimed at the vertex will follow the law of reflection where the angle of incidence = the angle of reflection

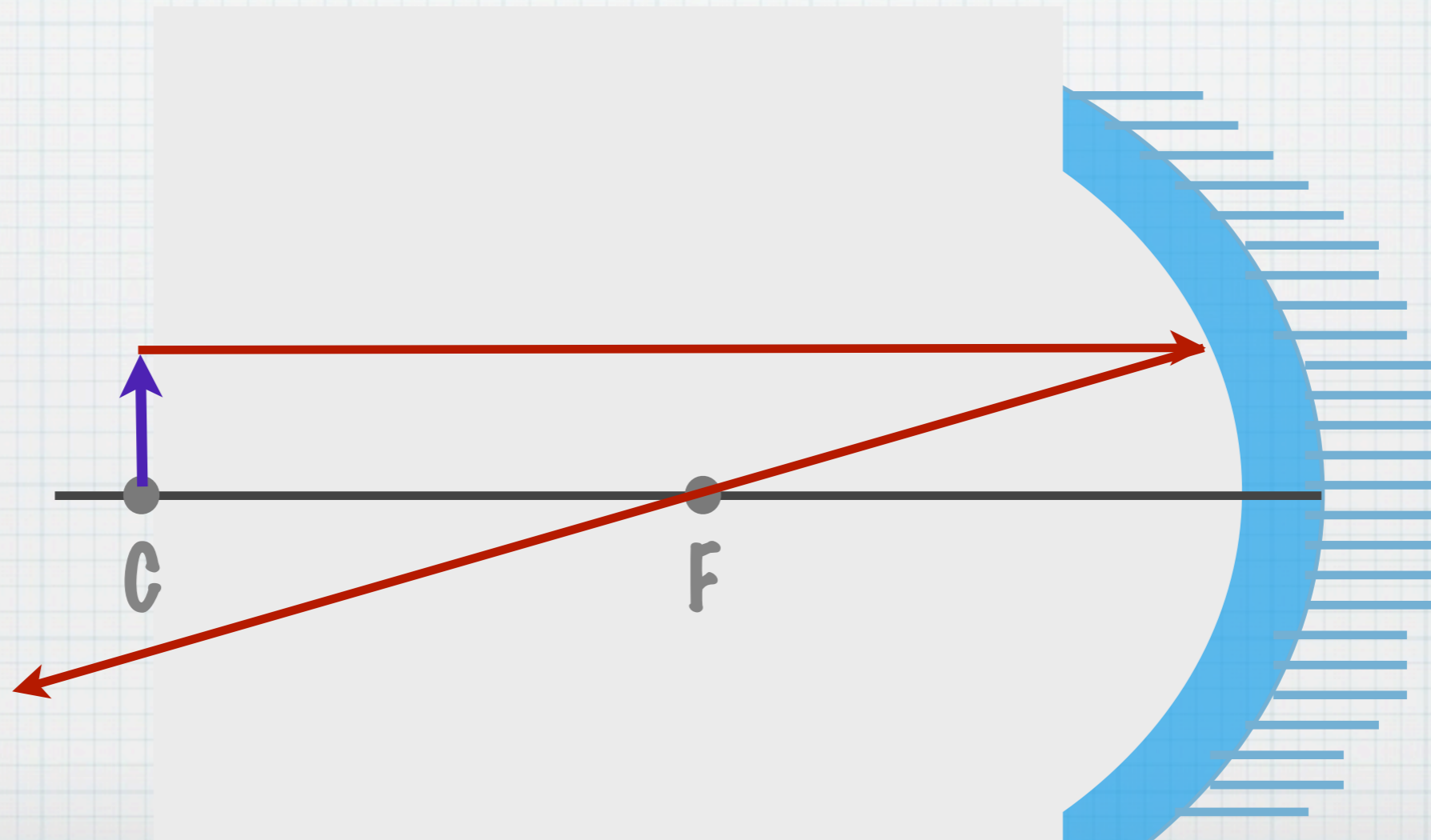


How to Locate an image in a converging mirror

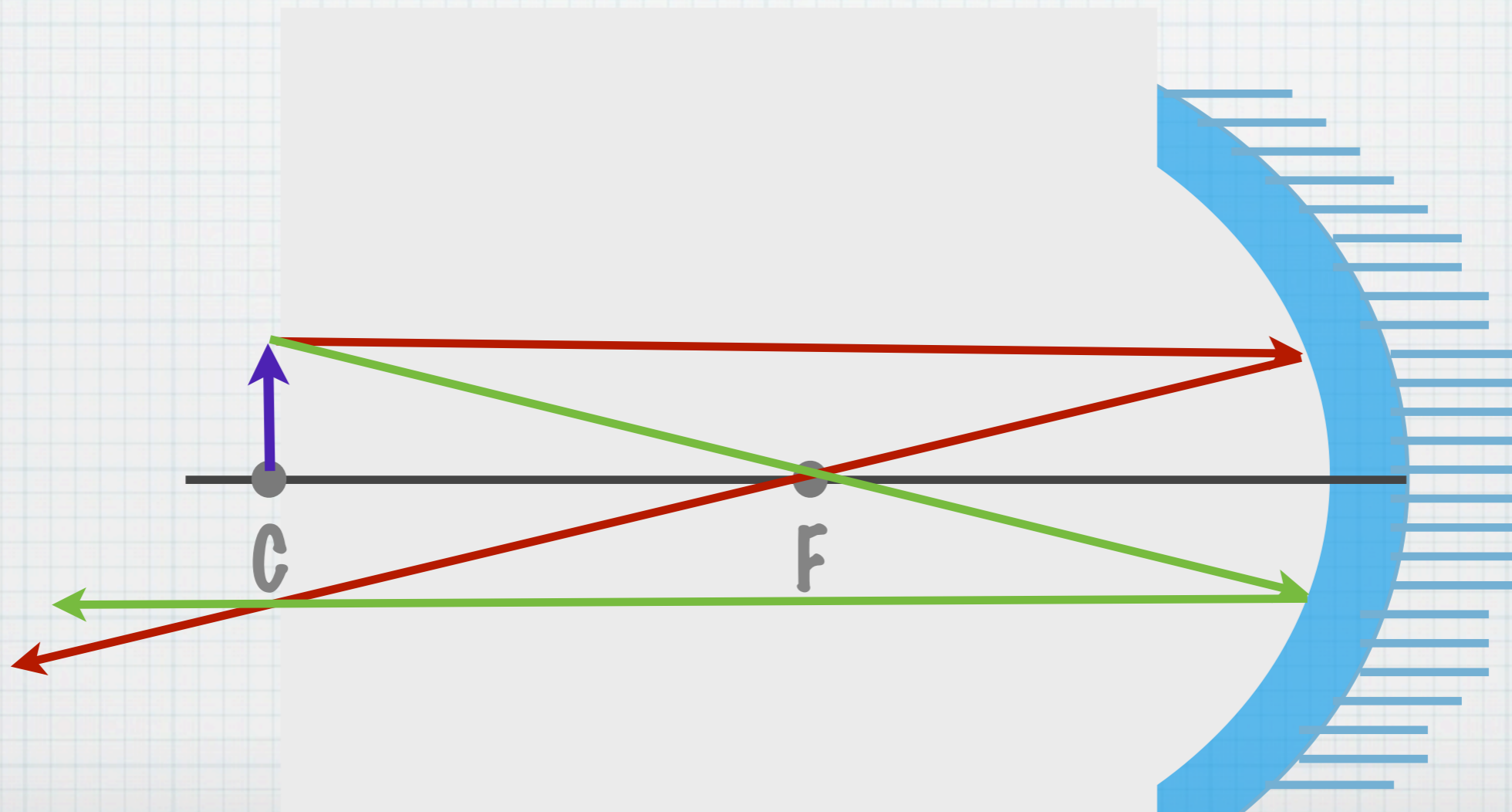
- * To locate an image in a mirror you need to draw at least two incident rays. The point at which two reflected rays converge (if they converge) is where your image will form.

How to Locate an image in a converging mirror

- * Step 1 - draw an incident ray from the top of the object, parallel to the principal axis and through the focus (F).



- * **Step 2** - draw an incident ray from the top of the object, through F and onto the mirror. Then draw the reflected ray so that it is parallel to the principal axis.



* Where the two rays cross is where your image will be located. The attitude, type and the size will also be shown!

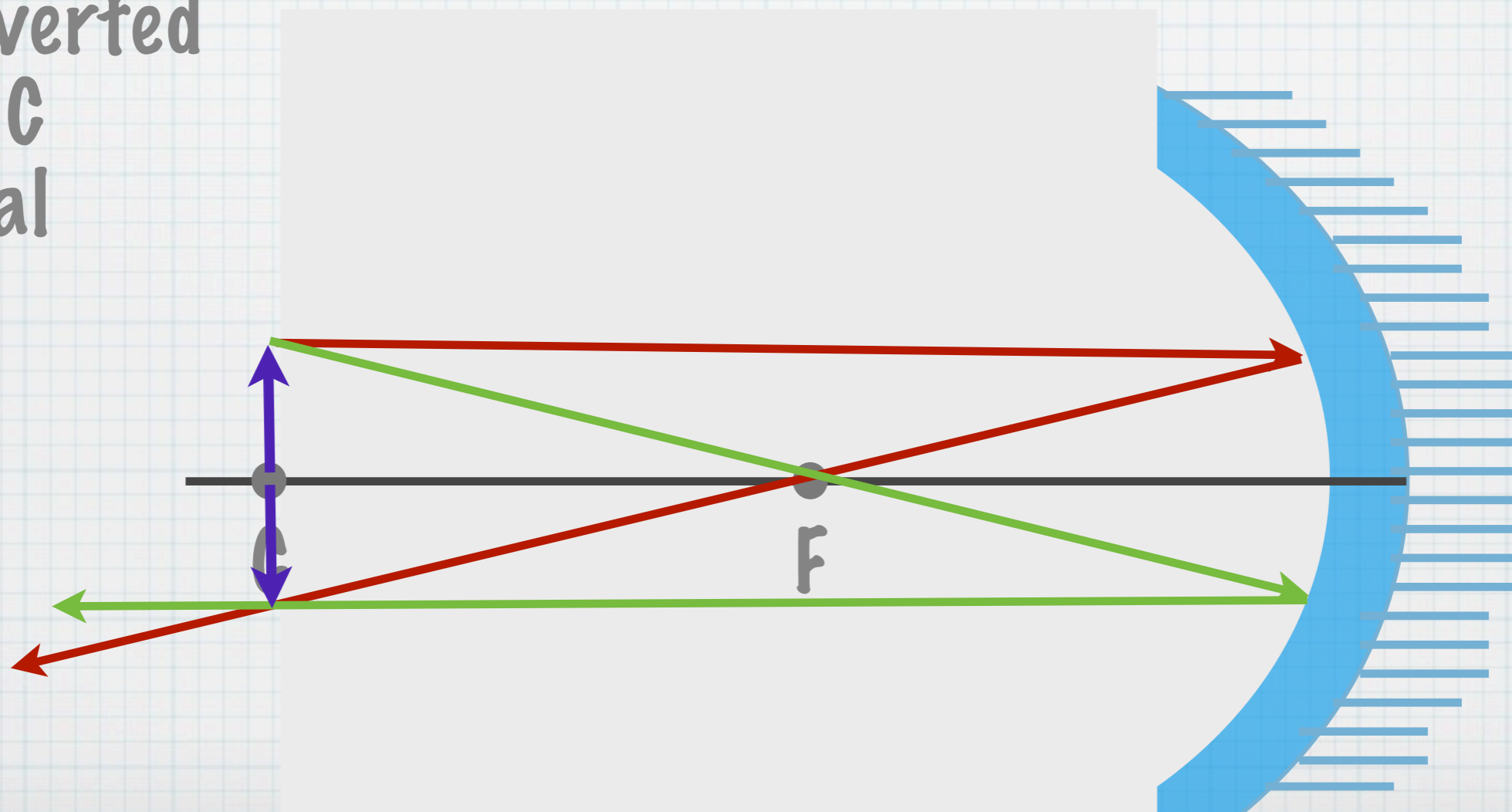
SALT

S: same size

A: Inverted

L: At C

T: Real



Homework

- * Complete the worksheet handed out. Do all objects EXCEPT image E
- * Once the worksheet is completed, fill out the SALT summary chart on the back.
- * Complete the following questions in your textbook for homework:
 - * p. 501 #2, 3, 5