

ACTIVITY 06 - Solar Eclipse Crosswords

Year Level: Years 3 to 12 (typically 8 to 18 years of age).

Background: A number of words will be used in the class that have various meanings for different aspects of eclipses. A variety of crosswords have been developed to allow students from the school years 3 – 6, 7 – 10 and 11 to 12 to learn these terms using the aptly named ECLIPSE crossword program. Alternatively, there are words and their meanings if you want to make up your own version. The link is <http://www.eclipsecrossword.com/download.html>. It is a FREE program.

Aim: To discover the meaning of key words associated with understanding of both solar and lunar eclipses.

References:

- Section 2 and 3 of the AAQ/STAQ teacher booklet.
- PowerPoint presentations PP02 and PP03

Safe Observing Message:

When discussing a solar eclipse students should be reminded that it is not safe to look directly at the Sun at any time and that safe viewing methods must be used to observe a solar eclipse.

Shape of the Australian Curriculum: Science strands on focus areas.

Content descriptors: Year 3, 5, 7 and 10

Science Understanding	Science as a Human Endeavour	Science Inquiry Skills
Yr 3 Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)	Yr 3, 5 7 and 10 N/A	Yr 3 Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACSIS060)
Yr 5 The Earth is part of a system of planets orbiting around a star (the Sun) (ACSSU078)		Yr 5 Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (ACSIS093)
Yr 7 Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the Sun, Earth and the Moon (ACSSU115)		Yr 7 Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate (ACSIS133)

<p>Yr 10</p> <p>The universe contains features including galaxies, stars and solar systems and the Big Bang theory can be used to explain the origin the universe (ACSSU188)</p>		<p>Yr 10</p> <p>Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS208)</p>
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YEARS 3 TO 6

Instructions: Students are to use the clues and the words listed below in the table to complete the crossword.

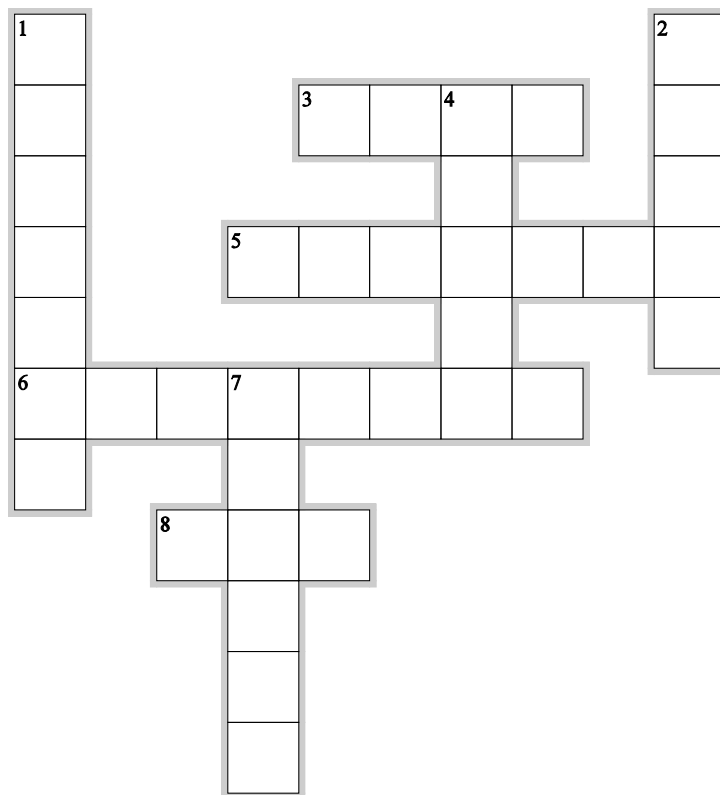
ECLIPSE	PHASE	MOON	SHADOW
DAY	GIBBOUS	ORBIT	SUNSPOTS

Across

- An object that orbits the Earth.
- When the Moon is more than half full, but less than completely full, this is known as a G_____ Moon.
- Dark spots on the Sun's surface.
- Amount of time it takes the Earth to spin once on its axis.

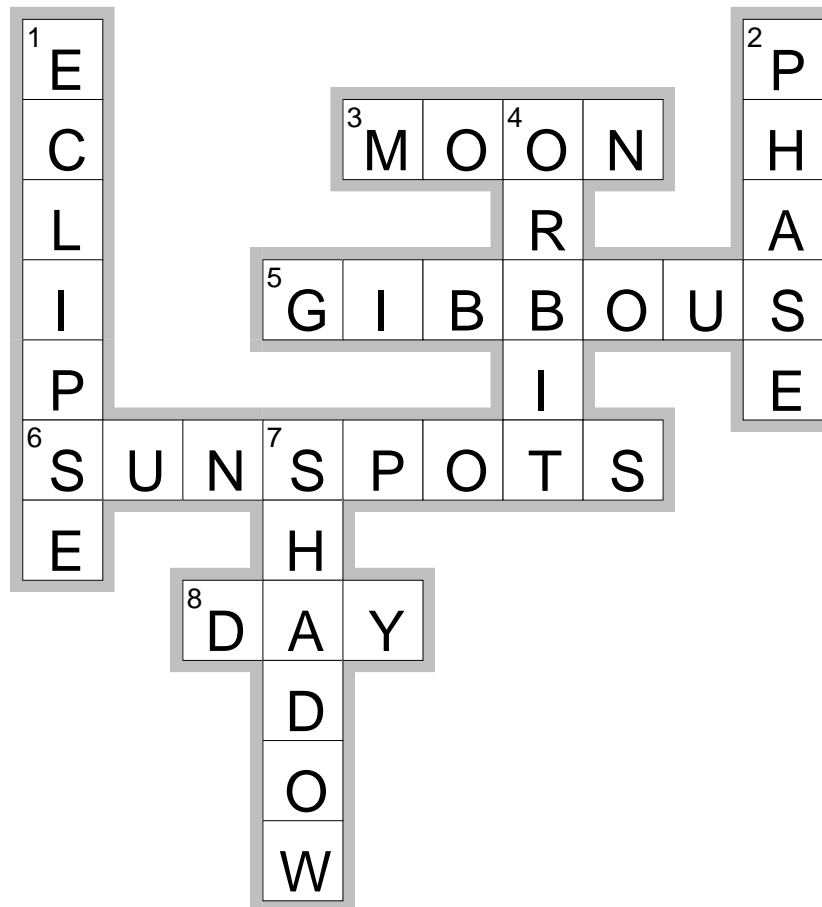
Down

- The passing of the Moon into the Earth's shadow (Lunar _____ P__) or of the Moon's shadow across the Earth (Solar _____).
- The shape the Moon appears to be as seen from Earth.
- The path of one object in space around another object is known as the __ b __.
- A sh_____ is an area where direct light from a light source cannot reach due to an object being in the way.



EclipseCrossword.com

YR 3 TO 6 SOLUTION



EclipseCrossword.com

Across

3. **MOON**—An object that orbits the Earth.
5. **GIBBOUS**—When the Moon is more than half full, but less than completely full, this is known as a G_____ Moon.
6. **SUNSPOTS**—Dark spots on the Sun's surface.
8. **DAY**—Amount of time it takes the Earth to spin once on its axis.

Down

1. **ECLIPSE**—The passing of the Moon into the Earth's shadow (Lunar _ _ _ _ P_ _) or of the Moon's shadow across the Earth (Solar _ _ _ _ _ _ _ _).
2. **PHASE**—The shape the Moon appears to be as seen from Earth.
4. **ORBIT**—The path of one object in space around another object is known as the _ _ b _ _.
7. **SHADOW**—A sh_ _ _ _ is an area where direct light from a light source cannot reach due to an object being in the way.

YEARS 7 TO 10

Instructions: Students are to use the internet to research the following terms and complete the crossword using the clues below.

CORONA	SOLAR	ORBIT	SHADOW	LUNAR	GIBBOUS
PENUMBRA	MOON	FIRST CONTACT	SUNSPOTS	DAY	PHASE
SECOND CONTACT	UMBRA	FOURTH CONTACT	SUN	THIRD CONTACT	ECLIPSE

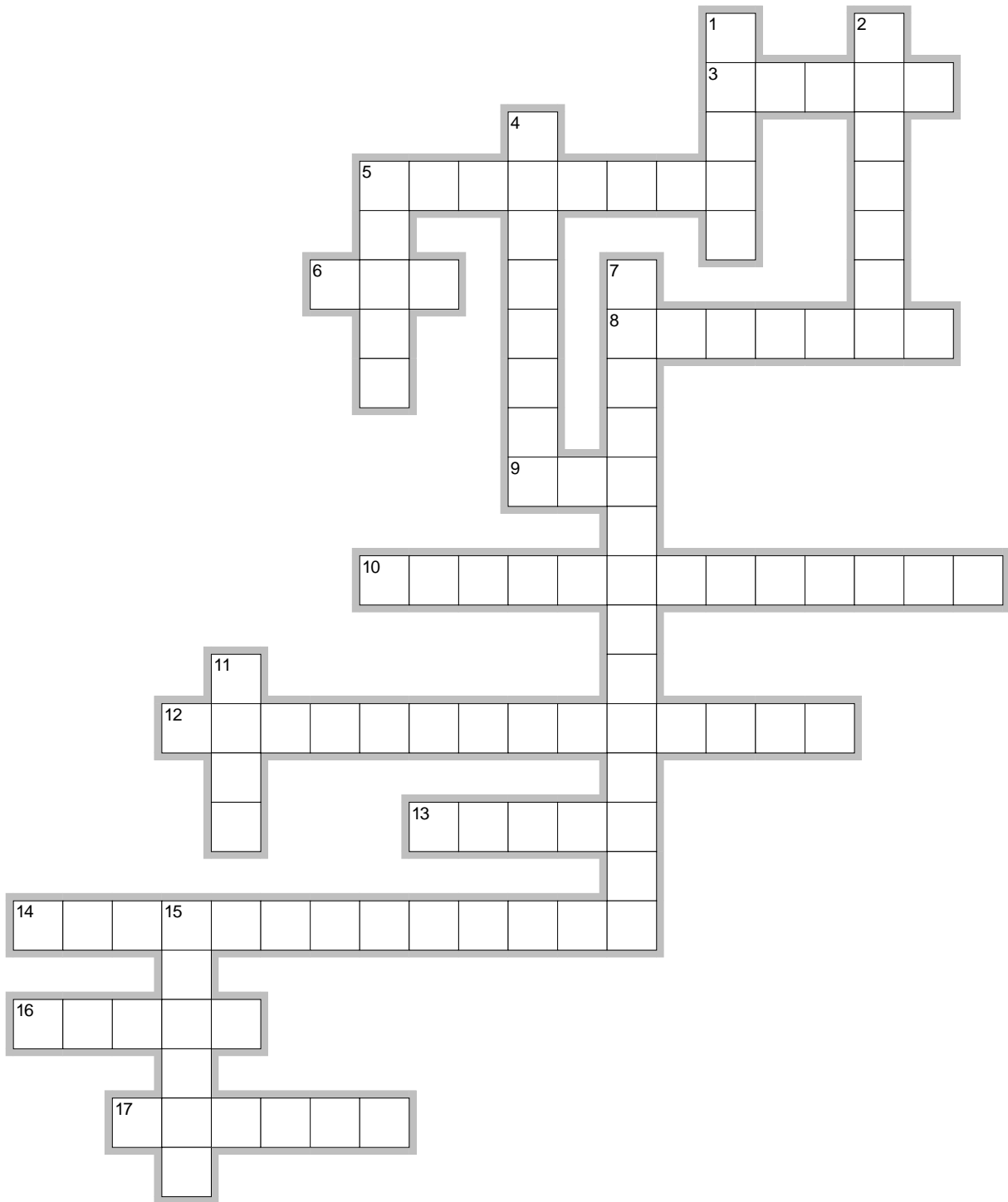
Across

3. The path of one object in space around another object.
5. The larger shadow cast by the Moon during a solar eclipse.
6. Amount of time it takes the Earth to spin once on its axis.
8. The passing of the Moon into the Earth's shadow (Lunar Eclipse) or of the Moon's shadow across the Earth (Solar Eclipse).
9. The star at the centre of our Solar System.
10. The end of the total phase of a solar eclipse marked by the trailing edge of the Moon first revealing the Sun.
12. The end of a solar eclipse when the disc of the Moon completely passes away from the disc of the Sun.
13. The dark, smaller shadow cast by the Moon during a total solar eclipse.
14. The beginning of a solar eclipse when the edge of the Moon first passes across the disc of the Sun.
16. Having to do with the Moon.
17. The faint, white light seen around the Sun during a solar eclipse.

Down

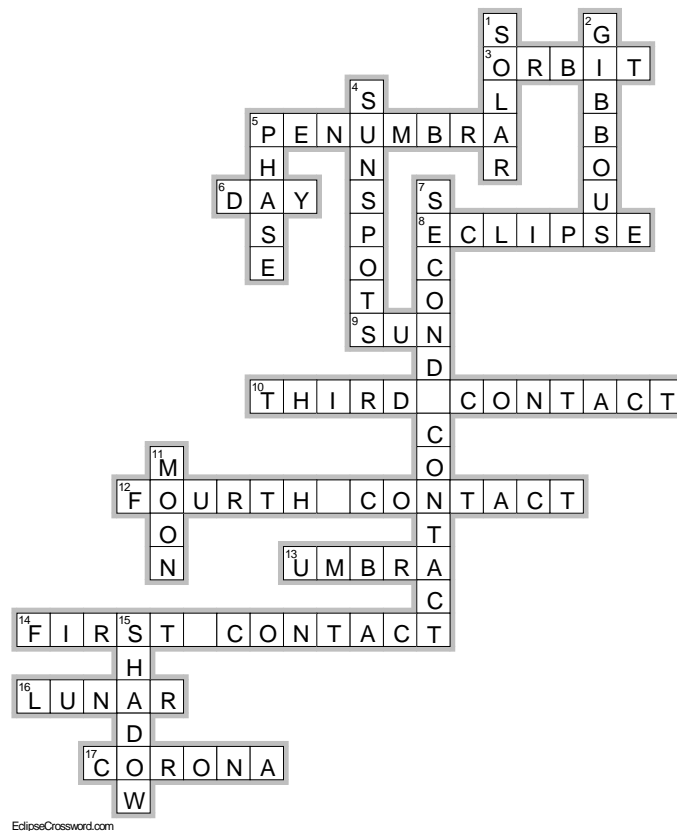
1. Having to do with the Sun.
2. When the Moon is more than half full, but less than completely full.
4. Dark spots on the Sun's surface.
5. The shape the Moon appears to be, as seen from Earth.
7. The beginning of the total phase of a solar eclipse when the leading edge of the Moon first completely obscures the Sun.
11. A space object that orbits the Earth.
15. An area where direct light from a light source cannot reach due to an object being in the way.

YEARS 7 TO 10



EclipseCrossword.com

YR 7 TO 10 SOLUTION



Across

3. **ORBIT**—The path of one object in space around another object.
5. **PENUMBRA**—The larger shadow cast by the Moon during a solar eclipse.
6. **DAY**—Amount of time it takes the Earth to spin once on its axis.
8. **ECLIPSE**—The passing of the Moon into the Earth's shadow (Lunar Eclipse) or of the Moon's shadow across the Earth (Solar Eclipse).
9. **SUN**—The star at the centre of our Solar System.
10. **THIRD CONTACT**—The end of the total phase of a solar eclipse marked by the trailing edge of the Moon first revealing the Sun.
12. **FOURTH CONTACT**—The end of a solar eclipse when the disc of the Moon completely passes away from the disc of the Sun.
13. **UMBRA**—The dark, smaller shadow cast by the Moon during a total solar eclipse.
14. **FIRST CONTACT**—The beginning of a solar eclipse when the edge of the Moon first passes across the disc of the Sun.
16. **LUNAR**—Having to do with the Moon.
17. **CORONA**—The faint, white light seen around the Sun during a solar eclipse.

Down

1. **SOLAR**—Having to do with the Sun.
2. **GIBBOUS**—When the Moon is more than half full, but less than completely full.
4. **SUNSPOTS**—Dark spots on the Sun's surface.
5. **PHASE**—The shape the Moon appears to be, as seen from Earth.
7. **SECOND CONTACT**—The beginning of the total phase of a solar eclipse when the leading edge of the Moon first completely obscures the Sun.
11. **MOON**—A space object that orbits the Earth.
15. **SHADOW**—An area where direct light from a light source cannot reach due to an object being in the way.

YEAR 11 TO 12

Instructions: Students are to use the internet to research the following terms and complete the crossword using the clues below.

First contact	Fourth contact	Lunar eclipse
Partial eclipse	Path of totality	Penumbra
Prominence	Saros	Second contact
Shadow bands	Solar eclipse	Sunspot
Third contact	Total eclipse	Totality
Umbra		

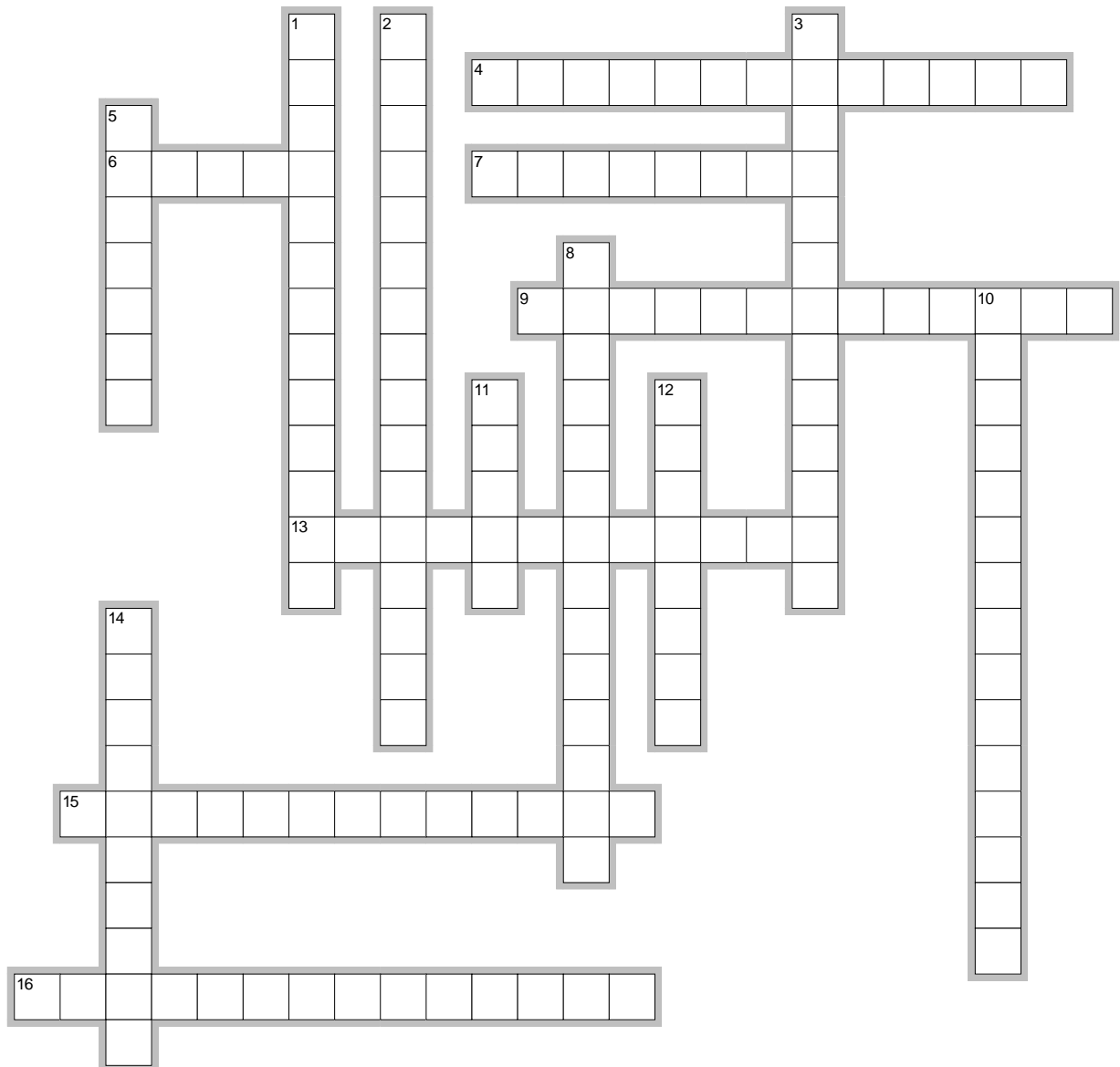
Across

4. The end of the total phase of a solar eclipse marked by the trailing edge of the Moon first revealing the Sun.
6. A complete shadow (as of the Moon) within which the source of light (the Sun) is totally hidden from view.
7. The part of a shadow (as of the Moon) within which the source of the light (the Sun) is only partially blocked.
9. The passage of the new Moon directly between the Sun and Earth when the Moon's shadow is cast upon the Earth.
13. Faint ripples of light sometimes seen on flat, light coloured surfaces just before and after totality.
15. The beginning of a solar eclipse when the edge of the Moon first passes across the disc of the Sun.
16. The beginning of the total phase of a solar eclipse when the leading edge of the Moon first completely obscures the Sun.

Down

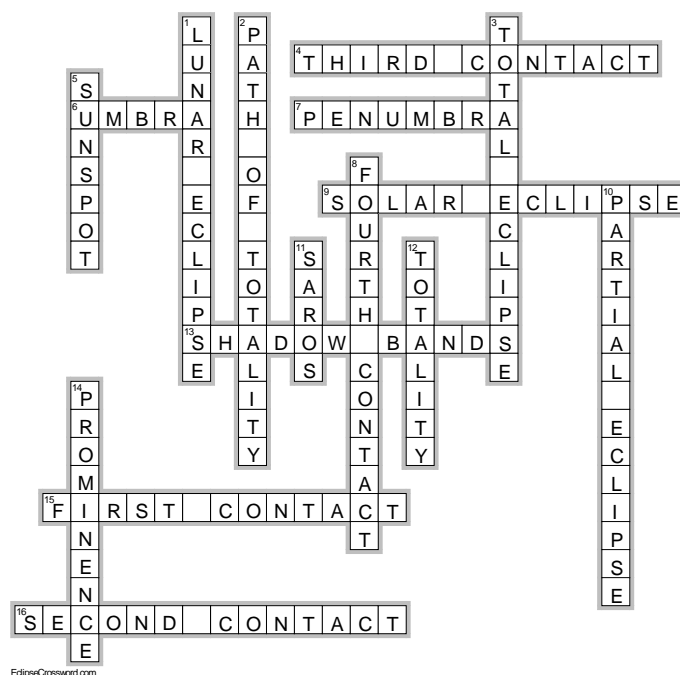
1. The passage of the Moon into the shadow of the Earth, always occurring at a full moon.
2. The path (up to about 270 km wide) that the Moon's umbral shadow traces on the Earth during a total solar eclipse.
3. An eclipse during which the umbra touches the Earth (for a solar eclipse) or completely engulfs the Moon (for a lunar eclipse).
5. A magnetic disturbance on the Sun that appears as a dark blotch on it.
8. The end of a solar eclipse when the disc of the Moon completely passes away from the disc of the Sun.
10. An eclipse during which only the penumbral shadow touches the Earth (for a solar eclipse) or the Moon partially enters the Earth's umbra (for a lunar eclipse).
11. The eclipse cycle with a period of 18 years and about 11 days.
12. The period during a solar eclipse when the Sun is completely blocked or the Moon is completely immersed in the Earth's shadow for a lunar eclipse.
14. A large-scale gaseous formation above the surface of the Sun.

YEAR 11 TO 12



EclipseCrossword.com

YR 10 TO 12 SOLUTION



Across

- 4. THIRD CONTACT**—The end of the total phase of a solar eclipse marked by the trailing edge of the Moon first revealing the Sun.
- 6. UMBRA**—A complete shadow (as of the Moon) within which the source of light (the Sun) is totally hidden from view.
- 7. PENUMBRA**—The part of a shadow (as of the Moon) within which the source of the light (the Sun) is only partially blocked.
- 9. SOLAR ECLIPSE**—The passage of the new Moon directly between the Sun and Earth when the Moon's shadow is cast upon the Earth.
- 13. SHADOW BANDS**—Faint ripples of light sometimes seen on flat, light coloured surfaces just before and after totality.
- 15. FIRST CONTACT**—The beginning of a solar eclipse when the edge of the Moon first passes across the disc of the Sun.
- 16. SECOND CONTACT**—The beginning of the total phase of a solar eclipse when the leading edge of the Moon first completely obscures the Sun.

Down

- 1. LUNAR ECLIPSE**—The passage of the Moon into the shadow of the Earth, always occurring at a full moon.
- 2. PATH OF TOTALITY**—The path (up to about 270 km wide) that the Moon's umbral shadow traces on the Earth during a total solar eclipse.
- 3. TOTAL ECLIPSE**—An eclipse during which the umbra touches the Earth (for a solar eclipse) or completely engulfs the Moon (for a lunar eclipse).
- 5. SUNSPOT**—A magnetic disturbance on the Sun that appears as a dark blotch on it.
- 8. FOURTH CONTACT**—The end of a solar eclipse when the disc of the Moon completely passes away from the disc of the Sun.
- 10. PARTIAL ECLIPSE**—An eclipse during which only the penumbral shadow touches the Earth (for a solar eclipse) or the Moon partially enters the Earth's umbra (for a lunar eclipse).
- 11. SAROS**—The eclipse cycle with a period of 18 years and about 11 days.
- 12. TOTALITY**—The period during a solar eclipse when the Sun is completely blocked or the Moon is completely immersed in the Earth's shadow for a lunar eclipse.
- 14. PROMINENCE**—A large-scale gaseous formation above the surface of the Sun.

A large number of eclipse words and their meanings can be found at the following web site.

<http://www.earthview.com/resources/glossary.htm>

Extension : Using the above words create a poster that shows a diagram that encompasses the words you have discovered the meanings of.