

Star Stories

Curriculum Level : 3
Component : eScout
Module : Our Solar System
Strand : Planet Earth and Beyond

Contents

1. Lesson Plan
11. Writing Ideas
12. Venn Diagrams
15. Explanation Guides



Overview

This eScout is a text to introduce stories about stars. Within this book, students will be introduced to many new and challenging ideas, and vocabulary specific to this topic. The students will likely have some ideas about stars, and would be encouraged to develop these as they read.

This text contains many features of nonfiction text, including: contents page, photos and captions, diagrams, maps, graphs, and glossary.

Star Stories is designed to be used for guided reading sessions with students who are reading independently at ruby or sapphire. It can be used for shared group reading at silver or emerald.



Chip is the interactive character for this text. Chip can be clicked to provide extra and interesting information that can be read or listened to and discussed by the students. Note that any text within the interactive box is not levelled and has a supportive audio read.



There are embedded videos in this text. They can be watched and discussed as a group, or saved for reflection independently. Students should be encouraged to relate what they watch to what they are reading.

Curriculum links

Science – Level 3

Planet Earth and Beyond

Astronomical Systems

Investigate the components of the solar system, developing an appreciation of the distances between them.

Physical World

Physical Inquiry and Physics Concepts

Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat. For example, identify and describe the effect of forces (contact and non-contact) on the motion of objects; identify and describe everyday examples of sources of energy, forms of energy, and energy transformations.

The Nature of Science

Investigating in Science

Build on prior experiences, working together to share and examine their own and others' knowledge.

Ask questions, find evidence, explore simple models, and carry out appropriate investigations to develop simple explanations.

Communicating in Science

Begin to use a range of scientific symbols, conventions, and vocabulary.

Literacy – Level 3

Level 3: Students will integrate sources of information, processes, and strategies with developing confidence to identify, form, and express ideas. By using these processes and strategies when listening, reading, or viewing, students will: Show a developing understanding of how texts are shaped for different purposes and audiences; Show a developing understanding of ideas within, across, and beyond texts; Show a developing understanding of how language features are used for effect within and across texts; Show a developing understanding of text structures. *Students will integrate sources of information, processes, and strategies with developing confidence to identify, form, and express ideas. By using these processes and strategies when speaking, writing, or presenting, students will:* Show a developing understanding of how to shape texts for different purposes and audiences; Select, form, and communicate ideas on a range of topics; Use language features appropriately, showing a developing understanding of their effects; Organise texts, using a range of appropriate structures.

Reading Focus

- Identifying the specific features and structures of texts where sentences are usually organised into paragraphs (continuous text)
- Identifying the specific features and structures of texts where sentences are not usually organised into paragraphs (non-continuous text) e.g charts, graphs, tables, diagrams, maps, etc.
- Locating and summarising ideas in their own words – e.g (skimming, scanning, identifying key ideas, using subheadings)
- Interpreting illustrations, photographs, text boxes, diagrams, maps and graphs
- Regularly reading for sustained periods of time
- Locating and summarising ideas in their own words – e.g (skimming, scanning, identifying key ideas, using subheadings)
- Evaluating and integrating ideas and information across a range of texts

Writing Focus

- Identifying and reflecting on the writer's purpose
- Identifying and reflecting on the ways in which writers use language and ideas to suit their purposes
- Identifying and rejecting information that is irrelevant to the specific purpose for reading / writing

Language features	Possible Teaching Strategies
<p>Vocabulary:</p> <p>Day 1:</p> <ul style="list-style-type: none"> “spectacular”, “mass”, “exceptionally”, “nuclear fusion”. <p>Day 2:</p> <ul style="list-style-type: none"> Students should identify their own vocabulary from this section <p>Day 3:</p> <ul style="list-style-type: none"> Students should identify their own vocabulary from this section <p>Day 4:</p> <ul style="list-style-type: none"> “Asteroid belt”, “Kuiper .Belt”, “Spherical”, “organic compounds”, “Oort Cloud”, “galaxy”, and “Large and Small Magellanic Clouds” 	<p>A deliberate focus on vocabulary across all learning contexts will support students as they use and create texts of increasing complexity. Monitor the impact of your teaching by noticing how students are using and recognising new vocabulary in their reading and writing and explaining their processes.</p>
<p>Language Features:</p> <p>Features of nonfiction text, including contents pages, chapter headings, glossary words, diagrams, maps, photos with captions and drawings.</p>	<p>Students should be able to recognise these and discuss how and why they use.</p>
<p>Prior Knowledge and Experiences:</p> <p>Students will have some knowledge of the stars including some knowledge and experiences with astronomy.</p>	<p>Students should be building on their understanding as they go. They should discuss new and developing ideas each new session.</p>

Instructional reading

Focus	Lesson Sequence	Evidence / Support
<p>Introduction</p> <p>This text could be used over multiple reading sessions, with a mix of guided, independent and shared reading. Students should be encouraged to work in groups and independently. They should be encouraged, after the initial reading session, to find related information to share in the group. As students become more confident, they should be encouraged to read the text independently and use what they read to guide their independent inquiries. What, of the ideas they are reading about, interest the students the most?</p>		
<p>Title Page and Contents</p> <p>Prior Knowledge</p> <p>Prediction</p> <p>Asking questions</p>	<p>Have students look at the cover and contents page. Have them discuss what they think this book is about. Have them share what they already know about stars etc.</p> <p>Using the contents, have students discuss what they think the book will be about. What makes them think this? What other material have they read before? What have they viewed?</p> <p>Have students write questions about the stars that they hope to find out during reading. Others might be able to answer some of these, so add that to the prior knowledge. Discuss how it is OK to find information that is different to what we thought we already knew.</p> <p>There are three questions on the cover. Ask the students to predict what the answers might be. As they read the text they should discover how close they were.</p>	<p>Students should recognise that this is a nonfiction text. Have them discuss features that demonstrate this.</p> <p>Encourage students to give evidence for their predictions (i.e. I think the book will be about planets, because there are pages about planets).</p> <p>Students should be able to ask guiding questions, if not, support through modelling.</p>
	<p>Click on Chip. Discuss how to use and what to do when they see Chip on a page. Encourage students to wait till after reading a page to click as the information often extends or illustrates the information on the page. The text is automatically read, so you may want students to take turns or mute their devices.</p>	

Focus	Lesson Sequence	Evidence / Support
<p>Pages 2 -5 Starry Starry Skies</p> <p>Vocabulary</p> <p>Review</p> <p>Comprehension</p>	<p>Spectulated: guessed or predicted Mass: a body of matter with no defined shape. Exceptionally: unusual or uncommon. Nuclear fusion: where 2 nuclei form a nucleus and release energy. Fuse: join together.</p> <p>How can we help students in the reviewing process? Ask, what were the facts, events, or important parts of the passage? Draw a cartoon of the events of the story. Order the scenes in their correct order. Draw a diagram or make an info graphic of the ideas from the article. Make a timeline of events or a flow chart of the ideas in the article.</p> <p>Read the text Pages 2—5.</p> <p>Some possible comprehension questions could be:</p> <ul style="list-style-type: none"> • How do scientists find invisible stars? • How does a lighted candle help understand the hotness of a star? • What are nuclear fusion and nuclear fission? • What do the different colours of stars mean? • A supernova star is at what stage of its life? 	<p>Reviewing at the factual level of thinking is an important function in the thinking process as it requires the learner to reorganise and revisit the information in some logical way. It is like a bird's eye view of the events of a story or article. It reflects the overall structure of the text.</p>
	<p>(Page 2) Have students click Chip. Have students discuss the information. What does the author mean "looking back in time"?</p>	
	<p>(Page 3) Have students click Chip. Have students discuss the information. Students could use this to research ideas about how old the Sun, Moon and Earth are.</p>	
	<p>Have students watch the video. Encourage them to relate what they view to what they have read. Students could take this information and turn into an explanation.</p>	
<p>Follow Up Activities – Day 1:</p>		
<p>Students could:</p> <ul style="list-style-type: none"> • Watch the video about stories about stars. https://www.youtube.com/watch?v=Hm2MKez7atI These stars have names from ancient times. Students could research one or more to find out who named them and how they were used by the people of that time. • Using a life cycle graphic organiser the students could map the life of star and the different changes it exhibits. For more detailed information they could read: http://www.sciencekids.co.nz/sciencefacts/space/stars.html • Students could create a diorama showing the different stages and colours of stars. 		

Focus	Lesson Sequence	Evidence / Support
<p>Day 2 Instructional Reading and Activities Day Two – Pages 6 and 7 If the students are coping well with this text, it could be jigsawed to allow students to read a section each and report back to the group. They should be encouraged to identify evidence and examples from the text and read them to the group. This will give the teacher opportunity to listen to students reading and observe this.</p>		
<p>Day 2 Shapes in the Sky</p> <p>Vocabulary</p> <p>Monitoring</p> <p>Comprehension</p>	<p>Students should identify their own vocabulary from this section.</p> <p>Attending: focusing attention on the task. Planning: ordering information. This may take the form of writing notes, drawing diagrams, visualising. Organising: sifting the main ideas from the details. Encoding: arranging information and linking with background knowledge. from long-term memory. Reviewing: Recollecting the events of a story or the ideas presented in an article. Reorganising: Reframing the recollections in a way that is more meaningful and connected to one's life experience. Reflecting: Thinking about what has been learned and forming an opinion, making judgements, and predicting outcomes.</p> <p>Read text Page 6 and 7. Some possible comprehension questions may be:</p> <ul style="list-style-type: none"> • Why did ancient people create stories to go with the constellations? • Why do constellations appear upside down when seen in a different hemisphere? • What is the most significant star formation in the southern sky? 	<p>Focus on meaning - comprehension is about constructing meaning. Give specific feedback. Model the monitoring process by thinking out loud while reading so that the novice reader can hear what good readers do while reading. View self-correction as an important part of the reading process - it shows a focus on meaning making.</p>
<p>Follow Up Activities – Day 2:</p>		
<p>Students could:</p> <ul style="list-style-type: none"> • Choose a constellation to do further research on. Students could work together to share the constellations out and discuss the sort of information they want to find to compare • Find videos or other information to support the information about the constellations. They could share this at the next reading session 		

Focus	Lesson Sequence	Evidence / Support
<p>Day 3 Instructional Reading and Activities</p> <p>If the students are coping well with this text, it could be jigsawed to allow students to read a section each and report back to the group. They should be encouraged to identify evidence and examples from the text and read them to the group. This will give the teacher opportunity to listen to students reading and observe this.</p>		
<p>Pages 8 - 14 Story of Orion</p> <p>Vocabulary</p> <p>Relating Within and Across Text and Media</p> <p>Comprehension</p>	<p>Students should identify their own vocabulary from this section.</p> <p>Have students relate what they are reading on these pages with what they have read previously. Have them discuss any interesting or unusual connections they are making.</p> <p>Students should look at the choices the author has made when creating their own fact pages (finding related videos, extra information etc.).</p> <p>Read text on Pages 8-14</p> <p>Have students discuss the information as they read. They should be encouraged to ask and answer questions based on the text. There are 3 legends/myths on Pages 8-15. Students should read them then consider the following comprehension questions.</p> <ul style="list-style-type: none"> • Are there any similarities and differences between the legends? • Who are the characters in each legend? Which ones do you like/dislike? Why? • Establish a where, what, who, why and how summary for each legend. (This could be presented on a graphic organiser). • Read direct quotes from the characters. Why do the quotes show what the character is like? • What questions would you like to ask the characters? What do you think they reply? • What senses are mentioned in the legends (looks, tastes, sounds, feels and smells). • What connections can you make from the three texts? 	<p>Encourage students to talk about their prior knowledge and continue to ask questions when they come across new information.</p> <p>Encourage students to use information from the text to support responses.</p>
	<p>(Page 11) Have students click Chip. Have students discuss the information. Students could find other examples of constellations that have multiple names.</p>	

Follow Up Activities – Day 3:**Students could:**

- create a timeline for on eof the legends. This a sequential outline that identifies the key events in the story.
- develop a consequences chart. This is similar to cause and effect. Students choose different actions from the legends and identify what the consequences of the action is.
- Illustrate and write a wall story based on one of the legends. The key events in the legend must be portrayed.
- PMI. Students record thoughts about the text under the heading: Plus Minus Interesting.
- survey others who have read the legends to determine what they liked, disliked and would change. They should get justifications from their interviewees.
- make a word match. Students choose vocabulary and write definitions for each word. They could share this with others who have match the word with its correct meaning.

Focus**Lesson Sequence****Evidence / Support****Day 4 Instructional Reading and Activities**

If the students are coping well with this text, it could be jigsawed to allow students to read a section each and report back to the group. They should be encouraged to identify evidence and examples from the text and read them to the group. This will give the teacher opportunity to listen to students reading and observe this.

**Page 15 - 22
Using the Stars**

Students should identify their own vocabulary from this section.

Vocabulary

Have students discuss information. Have students discuss how they work out new words (e.g. photovoltaic).

Notetaking Skills

Note Taking

- Copy a short passage from a book of interest.
- Make a copy for you and all of your students.
- As you read the passage aloud, have kids suggest what they think are the key words or important facts.
- Have everyone underline the words or phrases that you consider to be important.
- Reread the underlined words to see if they contain the important information from the passage.

Comprehension

Encourage students to develop ways to remember spellings and meanings e.g. words in sentences, syllables, consonant blends, suffies and prefixes etc.

Eventually, after practicing together for some time, your kids can read the written passage on their own. Have them practice using a Mind Map

Students should be relating information across pages and discussing ideas that are consistent and / or new.

Focus	Lesson Sequence	Evidence / Support
<p>Comprehension</p>	<p>Read the text on Pages 14-21.</p> <p>The text is about how people used and still use the stars to make meaning of life.</p> <p>Some possible comprehension questions and activities might include:</p> <ul style="list-style-type: none"> • Students could expand their understanding about Stonehenge by reading the article - https://kidskonnnect.com/history/stonehenge/ • They could create True/false questions about the structure for others to answer. • What made the Egyptian astronomers powerful? • Why don't we worship the stars today? • What three skills did ancient navigators need to sail safely across the oceans? <p>Read the text on Page 22.</p> <p>Black holes are mysterious phenomena. What ideas do the students have about black holes. Can they relate information from other texts they have read about black holes?</p>	<p>Comprehension</p> <p>Some possible comprehension questions could be:</p> <ul style="list-style-type: none"> • If we can't see them, how do we know black holes are there? • What might high-energy light look like? • Why won't Earth be sucked into a black hole?
	<p>(Page 15) Have students click Chip. Have students discuss the information. Students could research the first star they see in the night sky. Why would you see a satellite?</p>	
	<p>(Page 11) Have students click Chip. Have students discuss the information. Students could look at navigation in the Southern Hemisphere (or Pacific) and relate to stars.</p>	
	<p>Have students watch the video. Encourage them to relate what they view to what they have read. Students could take this information and turn into an explanation.</p>	

Follow Up Activities – Day 4:

(Pages 14 – 21) Students could:

- <https://www.youtube.com/watch?v=-6oxmxPKoSE>
After watching the video the students could make predictions about what Stonehenge's purpose was. They could use the facts from the article in the comprehension activities to assist them.
- Research other Egyptian gods and their connection with the stars.
- Ancient Chinese astronomers made some amazing discoveries. Read the article <http://ephemeris.com/history/china.html>
- Students could create a Text Detective. From the information they read they develop five key facts which show how the astronomers made the calculation for 12 and 1/4 months for one year. They share the text and the facts with others who have to find the evidence that proves the facts. To extend this they could put in a false fact and the others have to decide which fact is false.
- Using their new and prior knowledge about stars, the students could make up poems. The poems should reveal something special or different about the chosen star. Poem could be created in any familiar form – free verse, cinquain, narrative etc.

(Page 22) Students could:

- Create a fact page about black holes.
- Create a documentary about black holes.
- Find videos and images to support what they have read and organise sensibly on a blog or webpage for other to access.
- Choose an image of a black hole to write about – could be descriptive, explanatory or creative.

Instructional Writing (Ideas)

Comic Strip

Students read the information http://www.esa.int/Our_Activities/Space_Science/Herschel/Herschel_at_a_glance

They could show the elements of the article on a story web. Centre web is HSO (Herschel Space Observatory).

Around the web, written on web strands are the most important facts.

From these facts the students could create a sequential comic strip with characters telling each other what is unique about the HSO.

Star Guide

Students could create a star catalogue. This could be produced digitally or in paper form. It would have the names of significant stars in the southern and northern skies, where they can be seen on a clear night and any other relevant facts. This site could be useful.

<http://www.abc.net.au/science/starhunt/>

Character Portrait

Students could draw and write caption for parts of the legends on P9-15 that are not illustrated already. They could also add in character quotes from the text.

Peak Point

Students could choose one of the legends on P 9-15 and decide what is the peak point of the narrative. They could rewrite this in their own words or make an audio/video report about their choice of their peak point and why.

Story Map

Students could create a story map about one of the legends on P9-15. Story maps provide a structure for students to retell events in their own words. The map is also illustrated.

Character Rating Chart

Students list the main characters from each legend on P 9-15. They devise a scale e.g. 1-3 or 1-5. Each number has a key that tells how much they liked or disliked the character. A character rating chart has a justification section where the student justifies their rating with examples of good/bad actions in the text.

Explanation

Using the text and images on P15 the students could make an explanation for how ancient people used the stars for planting and harvesting crops. They could also make models/structures to accompany the explanation. The explanation could be shared with others. Before the students start this activity they should have an age group audience in mind and tailor their vocabulary to suit.

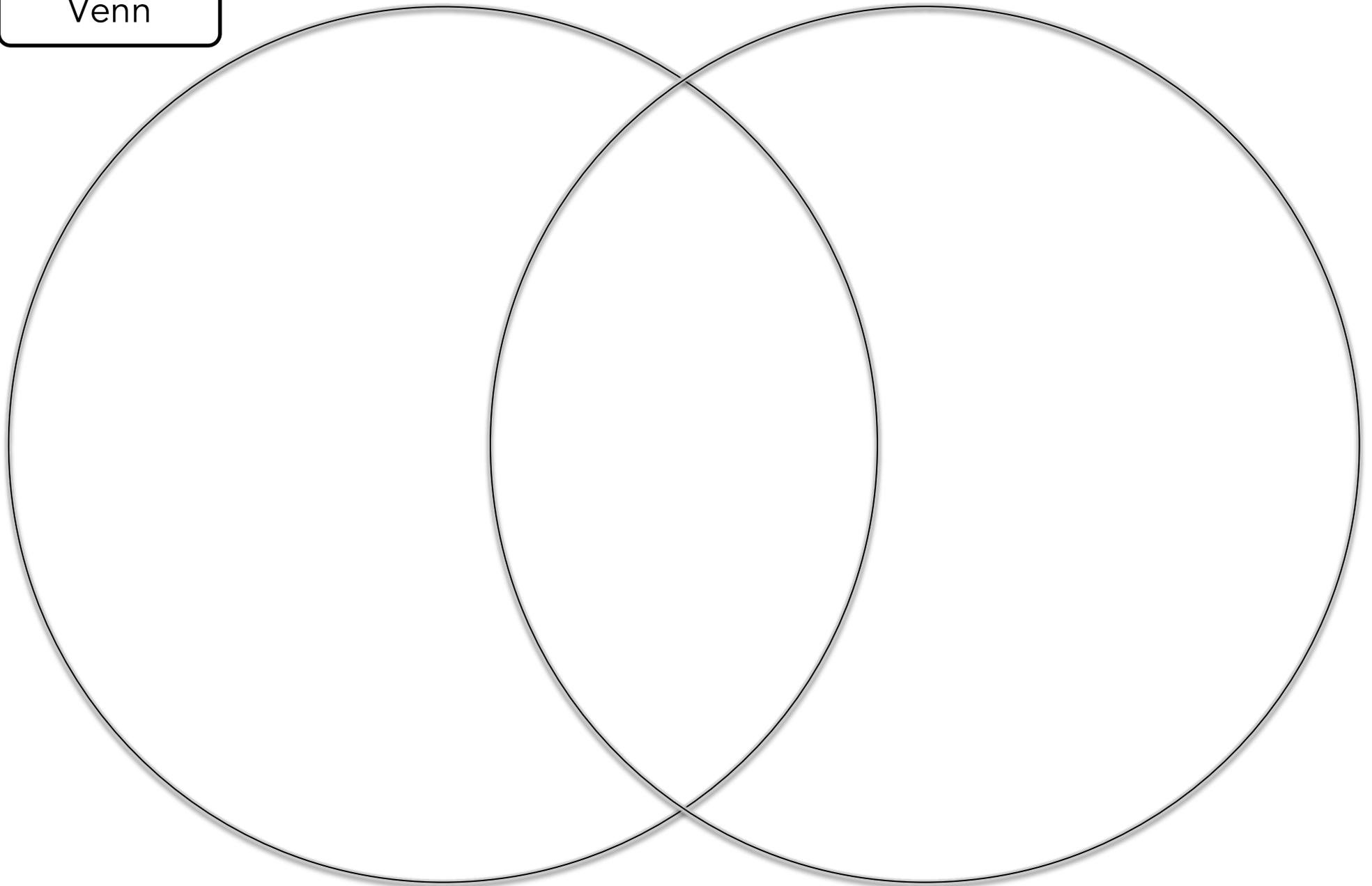
Timeline

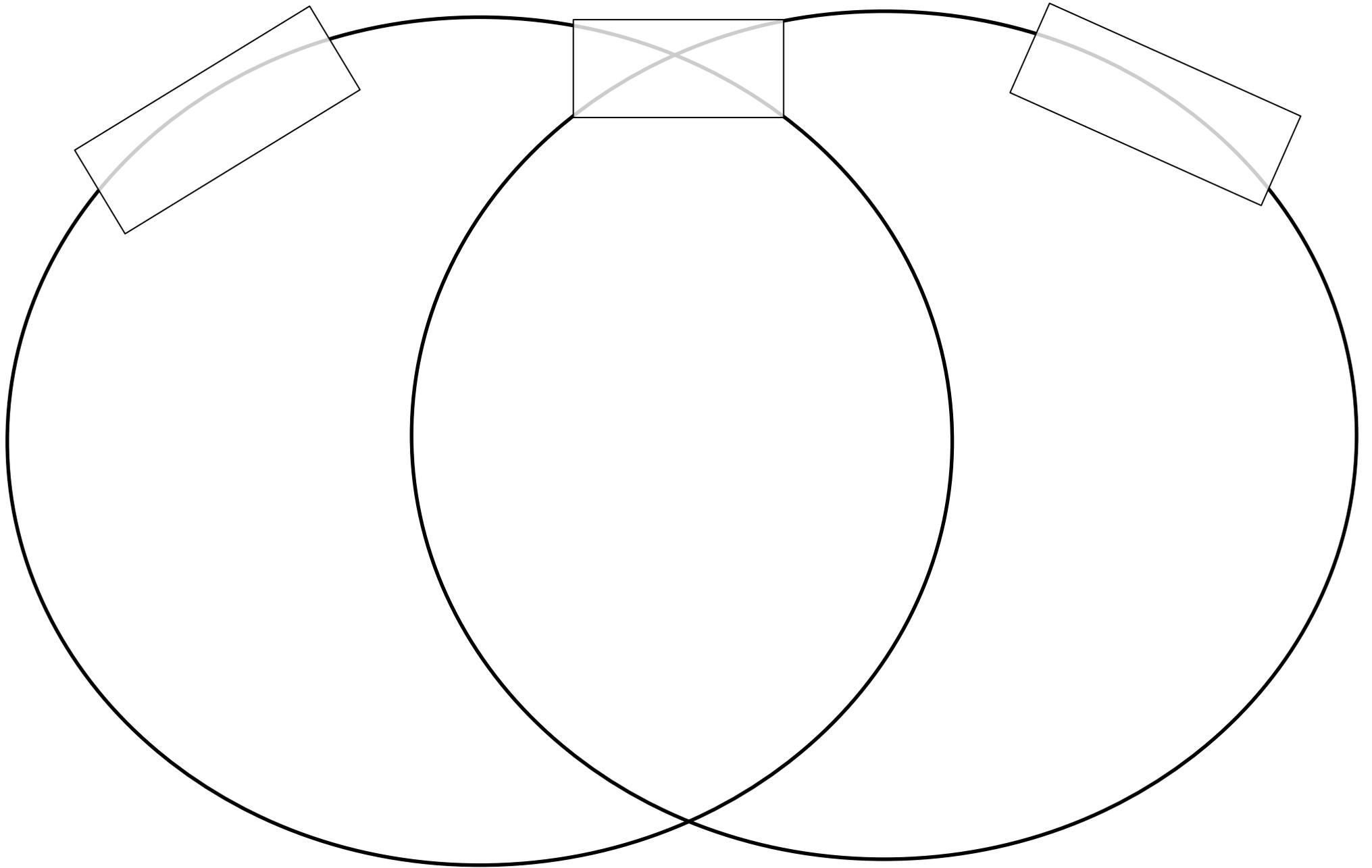
Research and discover other ancient astronomers. Decide which astronomers were the most the most important over time. Create a timeline showing the five most important astronomers and their discoveries.

Astrology Chart

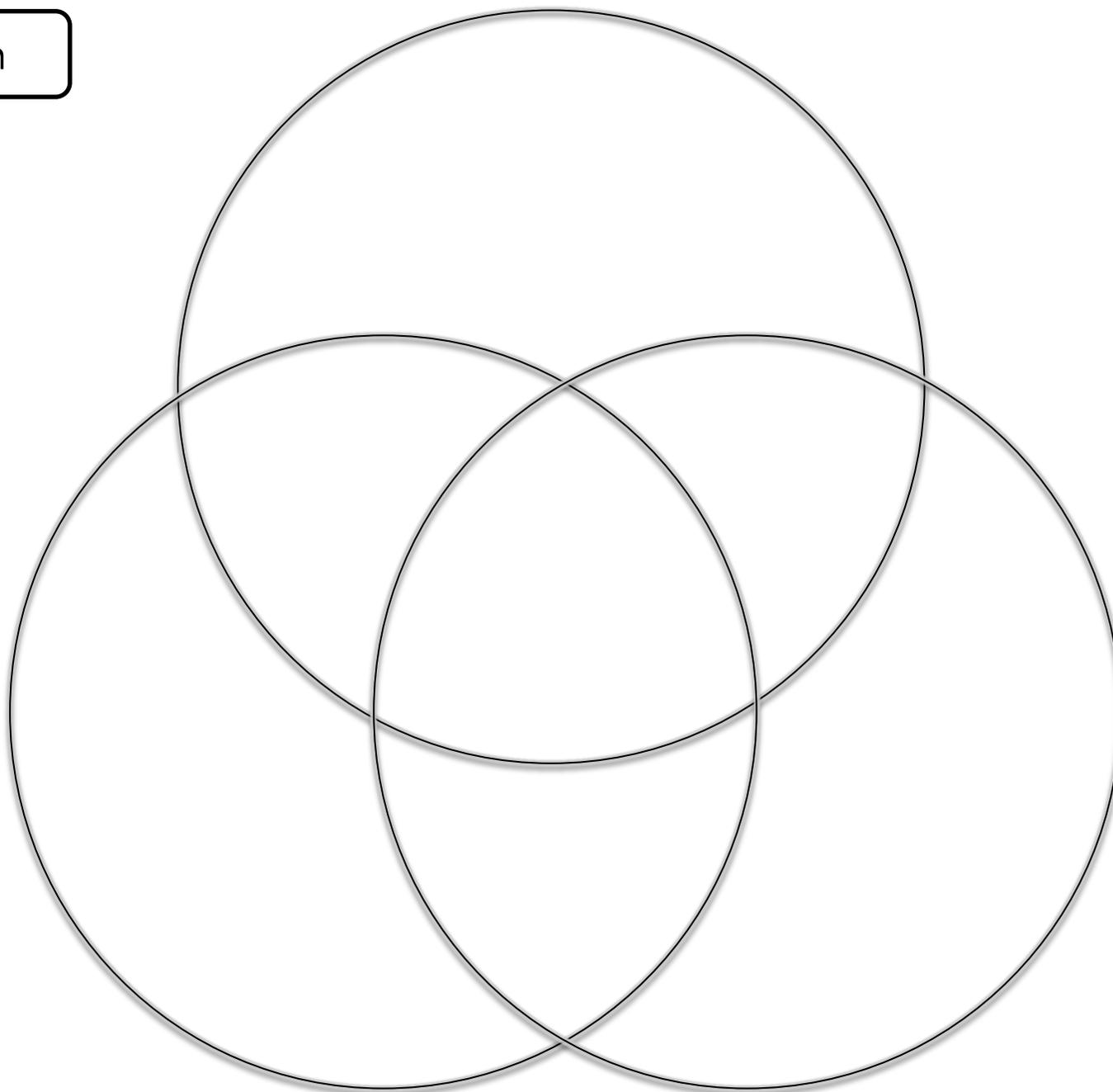
Students could research what star sign they were born under. They could create an astrology chart that has two sections – Traits (star sign) and Proof. Under Traits they list the common characteristics of the star sign and under Proof they give personal evidence of each trait. Once complete the students could generalise about whether they are true to their star sign or not.

Venn





3 Venn



Topic:
Name:

Definition / Description

**Explanation
Planning**

