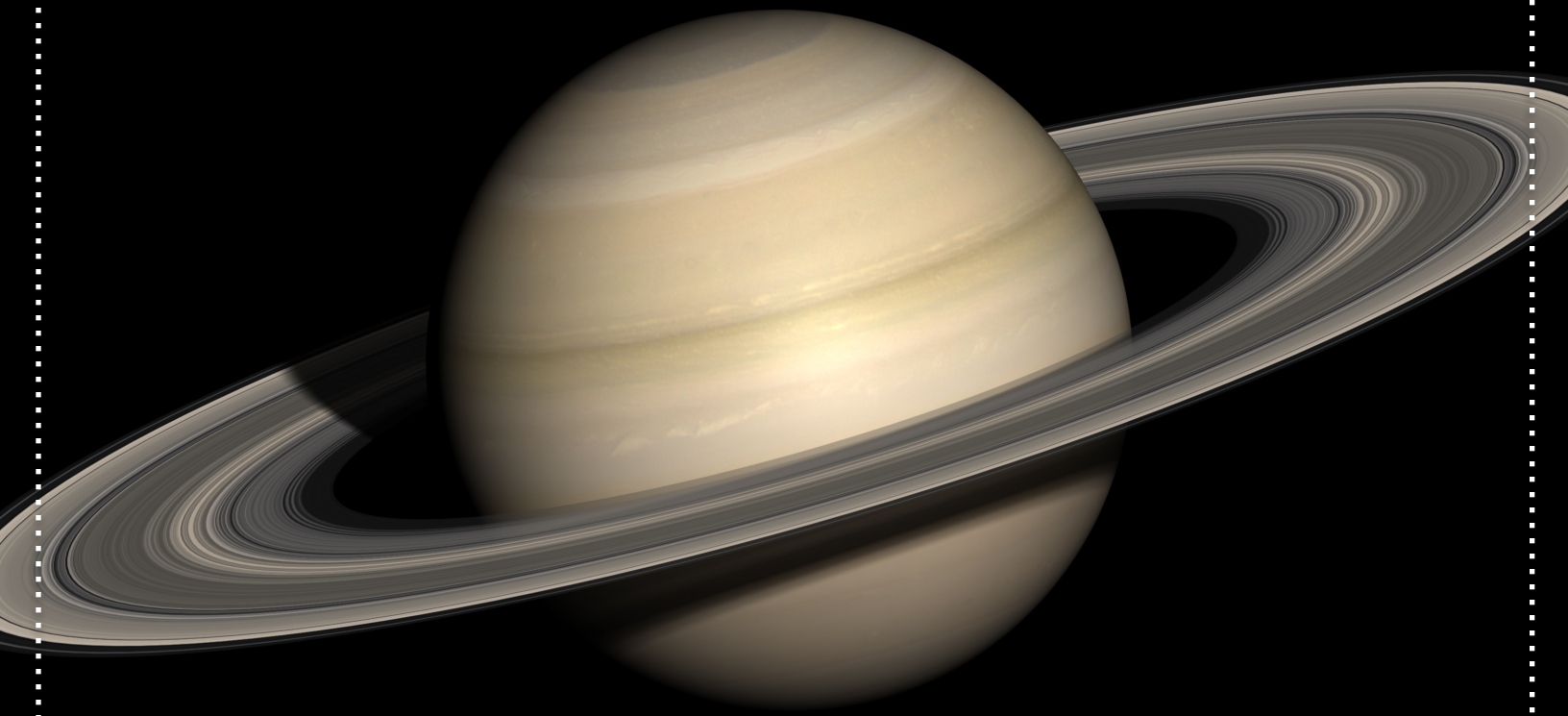
EXPERIENCE
ASTRONOMY



Curriculum Guide

EXPERIENCE ASTRONOMY
CURRICULUM GUIDE

BY: LUKE GILKERSON

Welcome to Experience Astronomy

Dear Parent or Guardian,

For as long as I can remember, I have loved astronomy.

I still remember when I was six years old looking up at the sky staring at the full moon. I walked from one end of my backyard to the other, mystified that the moon seemed to "follow me" wherever I went.

I still remember taking a field trip in second grade to the downtown planetarium at the Center of Science and Industry—definitely the highlight of my school year.

I continued being an astronomy nerd through high school, getting a membership at the local observatory, devouring their monthly newsletter. I remember attending their special events—like watching the bright comet Hale-Bopp fly through the inner solar system. (If you missed it, sorry; it won't be back until the year 4385.)

I became a stargaze instructor in college, leading presentations for undergrad astronomy students on the roof of the physical sciences building. This experience required me to learn a lot about astronomy and allowed me to rub shoulders with some pretty brilliant professors and astronomers.

After I became a father, I started teaching astronomy to at our local homeschool co-op, and I got to watch the faces of kids light up as I taught them about our big universe God created.

That's why I created Experience Astronomy—hoping that, through this course, your child will grow in their love and understanding of the heavens as I have. The heavens declare the glory of God (Psalm 19:1).

Luke Gilkerson

Getting Started

Signing into the Online Course

This is how your student can sign in to the online course.

1. Go to ExperienceAstronomy.com
2. Click on the top menu item My Courses
3. Enter the correct username and password

The first time your child signs in…

1. Click on "Start a Course!"
2. Click "Experience Astronomy."
3. Click "Start Taking This Course"

Every time after this, when your child signs in, Experience Astronomy will be listed as an active course. Simply Click "Experience Astronomy" after signing in and you will come to the online classroom.

Course Schedule

After your student signs into the online classroom, at the top of the course page you will see an overall schedule, including the Course Start Date, the date of the final week of the course, and any breaks when videos won't be posted.

New lessons will become available Sunday mornings on a weekly basis (except during any breaks).

Lesson 1 will be available for you to preview before the Course Start Date (your child may even complete that lesson if you wish, but the second lesson still won't be available until the second official week of the course).

FAQ: Why can't my child just go at their own pace through the class? Why do the lessons have to be once per week?

The course is designed to keep pace with what is actually happening in the sky. The one-lesson-per-week format allows your student to stay on track with what's happening in the sky so he or she can observe.

The course officially ends the last full week of May. If your child watches one video per week, they will end on time. Your child will have access to all the video through the end of June in case they want extra time to study for their final exam or in case they want to go back over any of the videos.

Downloading the Field Guide

After signing into the course, your student can download the Field Guide (always available at the top of the course page).

The Field Guide is a week-by-week activity guide for drawing and taking notes about what your student observes in the sky above.

FAQ: What do I do about bad weather?

Bad weather is inevitable, making star observations impossible. Clear weather should be taken advantage of whenever possible. Never look at a clear sky and say, "Well, I can always do it tomorrow."

That said, some weeks have cloudy skies every day. Not to worry. Most outdoor activities can be postponed a week without a problem. When the bad weather doesn't let up, it may be necessary to skip activities, or you can use the Neave Planetarium as a fallback (see page 8).

How the Course Works

What Each Lesson is Like

Each lesson involves…

1. A short video (about 20 minutes)
2. A quiz covering material from the video (which should ideally be taken shortly after watching the video)
3. An observation assignment from the Field Guide (this should be done that week after watching the video)
4. Many lessons have corresponding recommended reading assignment from *Signs & Seasons: Understanding the Elements of Classical Astronomy*

FAQ: Is the Signs & Seasons textbook required?

It is highly recommended, though not required, that you purchase the textbook *Signs & Seasons: Understanding the Elements of Classical Astronomy*, by Jay Ryan. In our opinion, this is the finest textbook on the market for learning about the motions of the heavens. We will assign reading from this textbook, but the reading is not required to complete the course. The reading will give more explanation to the concepts discussed in the videos.

All Quizzes Are Graded Automatically

Every weekly quiz or exam is graded as soon as the student finishes taking it.

The grades for each quiz can be viewed on the main course page (where all the lessons are displayed). The grades are visible under each lesson title.

There will be two exams: a midterm and a final. These will be longer and more comprehensive tests, but the week of these tests will include a review video lesson to help refresh your student's memory of the material that will be covered in the exams.

Parents Grade the Field Guide at the End

You, as the parent or guardian, are responsible for helping your student to keep up with the Field Guide assignments.

The Field Guide is not graded by the instructor. If you choose, you may want to give your student a grade on the Field Guide yourself.

We recommend assigning a percentage grade for the entire Field Guide at the end of the school year. Each assignment is worth 3 percentage points if done accurately, except for the Moon Phases activity which is 4 weeks long and work 13 percentage points. Be aware that weather may not cooperate every week, so some weeks it may be best to grade based on effort, not results.

Help with the Field Guide Observations

Any time your student is required to go out to look for specific stars, planets, or constellations, the following website will come in very handy:

neave.com/planetarium

This website is an online planetarium. You can reproduce the sky on your computer screen for any location on Earth, for any dates, for any time of day or night.

Your student can use this website in order to acquaint themselves with the sky ***before*** they go outside. You can also use this website to ***check*** your student's work. Additionally, if the weather is uncooperative for several weeks in a row, this website can be used instead of viewing the sky directly (but it is a second-best).

How to use this website:

- Set the sky to your location
- Set the date and time to the correct day for observing
- Turn on the constellation patterns so you can more easily see them.

Use this to turn time of the sky "on." This will animate the sky to move at the pace the real sky moves.

Use this to set the date and time. The clock uses military time and corrects itself for Daylight Saving Time.

Use this to set the sky to your location.

Use this to turn the constellation lines on and off.

Use this to turn the daylight on and off.

Recommended Reading

It is highly recommended students get a copy of *Signs & Seasons: Understanding the Elements of Classical Astronomy*. While none of the quizzes or exams will be based on material exclusively in the textbook, the book will help to reinforce what is learned in the lectures (especially for those students who learn best by reading).

Below are the assigned readings in order. The online classroom will inform students about these reading assignments each week, but the assignments are listed for you as a handy reference.

- Lesson 1: p.1-8
- Lesson 2: p.9-27
- Lesson 3: p.126-128
- Lesson 4: p.29-32, 119-120
- Lesson 5: p.36-53
- Lesson 6: p.145-150
- Lesson 7: none
- Lesson 8: none
- Lesson 9: p.129-131
- Lesson 10: p.71-79
- Lesson 11: p.80-92
- Lesson 12: review p.145-150
- Lesson 13: p.33-35, review 51-53
- Lesson 14: none
- Lesson 15: p.93-117
- Lesson 16: p.121-123
- Lesson 17: none
- Lesson 18: none
- Lesson 19: p.153-160
- Lesson 20: review p.74-76
- Lesson 21: p.132
- Lesson 22: review p.45-46
- Lesson 23: none
- Lesson 24: p.55-70
- Lesson 25: p.160-166
- Lesson 26: p.174-177
- Lesson 27: p.167-174, 178-184
- Lesson 28: p.123-126
- Lesson 29: p.150-152
- Lesson 30: none
- Lesson 31: review p.93-96
- Lesson 32: none
- Lesson 33: review p.80-92
- Lesson 34: review p.150-152
- Lesson 35: p.133-144