2nd Grade Astronomy Unit
Unit Blueprint

Lesson	Essential & Unit Questions (for conceptual benchmarks)	Benchmarks (**Bolded** sections indicate portion of benchmark addressed)	Formative and Summative Assessments (Unless noted as a Summative Assessment, the assessments are formative and should be used to inform teaching and learning.)	Using Assessments to Monitor Student Learning
Lesson 1: Sky Wilderness **Pacing Suggestions:** **Days 1 & 2-** *Session 1* on pages 54-58 in Teacher's Edition (2 pictures per day) **Day 3-** *Session 2* on pages 58-62 in Teacher's Edition **Teacher Resources:** 	When can the sun be seen in the sky? When can the moon be seen in the sky? How do the sun, moon, and stars appear to move in the sky?	Pre-assessment of 4A(K-2)#2: The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. The sun, moon, and stars all appear to move slowly across the sky.	Student drawings of sky throughout story (See directions on page 58 of Teacher's Edition. Use teacher-generated *Lesson 1 Drawing Paper* and *Pre-Unit Assessment Checklist* available under "Teacher Resources" on electronic curriculum.) Class discussion of *Checking Understanding* Questions 1-4 (See pages 60-61 in Teacher's Edition. Use teacher-generated *Checking Understanding* worksheet available under "Teacher Resource" on electronic curriculum.)	**Student Drawings:** • 7 a.m.: Do students show the sun rising (low in the sky)? • Noon: Do students show the sun high in the sky? • 7:30 p.m.: Is the sun low in the sky (approaching sunset) • 11 p.m.: Do students exclude a sun from their pictures? Do their pictures include stars? • Is there a moon (w/a realistic shape) in 1 or 2 consecutive pictures? If the moon is in 2 pictures, does it have the same shape? ***Checking Understanding*** See pages 60-61 in Teacher's Edition for detailed information on student responses.

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<u>Lesson 2: Moon Watching</u> **Pacing Suggestions:** **Day 1-** *Teaching Strategies* Steps 1 & 2 on pages 67 & 68 in Teacher's Edition **Day 2-** *Teaching Strategies* Steps 3-5 on pages 68 - 71 in Teacher's Edition **Days 3, 4, & 5-** Focus on Moon observations **Ongoing –** Student Moon Journals (See Steps 6 & 7 on pages 71 & 72 in Teacher's Edition.) **Teacher Resources:** 	What does the moon look like throughout a month? When can the moon be seen in the sky?	4A(K-2)#3: The moon looks a little different every day, but looks the same again about every four weeks. 11C(K-2)#1: Things change in some ways and stay the same in some ways. 4A(K-2)#2: The sun can be seen only in the daytime, but **the moon can be seen sometimes at night and sometimes during the day.** The sun, moon, and stars all appear to move slowly across the sky.	*What Do You Know About the Moon?* (Use teacher-generated sheet available under "Teacher Resources" on electronic curriculum. Also, see page 67 in Teacher's Edition for background information.) Student Moon Journals & class discussion of moon observations (can be incorporated into daily calendar routine) <u>Click to view a sample Moon Journal.</u>	***What Do You Know About the Moon?*** • Questions 1 & 2: Do students know that the moon is sometimes visible in the day and sometimes at night? • Question 3: Do students know the different shapes of the moon? **Moon Journals/Class Discussion of Observations** • Do students see a pattern to the shape of the moon? • Do students recognize that the moon is sometimes visible during the day and sometimes at night?

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<u>Lesson 3: Changes in Shadows</u> **Pacing Suggestions:** **Day 1-** *Session 1* on pages 86-88 in Teacher's Edition (Use *Shadow Fun* sheet under "Teacher's Resources.") **Day 2-** *Teaching Strategies* Steps 3-5 on pages 88-92 in Teacher's Edition **Day 3-** *Checking Understanding* and *Sun Facts* on pages 92-95 in Teacher's Edition **Teacher Resources:** 	Why is it helpful to use a tool such as a ruler?	1B(K-2)#2: **Tools such as** thermometers, magnifiers, **rulers**, or balances **often give more information about things than can be obtained by just observing things without their help**. 12B(K-2)#1: **Use whole numbers** and simple, everyday fractions **in** ordering, counting, identifying, **measuring, and describing things and experiences.**	Class discussion of Question 12 on page 66 in Student Edition (See second column on page 91 in Teacher's Edition.) Students measure shadow lengths and discuss results (Use teacher-generated *Shadows on the Move* sheet available under "Teacher Resources" on electronic curriculum.)	**Class discussion of measurement and tools** • Do students recognize the importance of using a ruler and how it provides better information for comparing shadow lengths (versus saying it is long, very long, or short)? • Are students able to measure accurately? • Do the students understand what the measurements mean?
	Throughout the day, what appears to happen to the sun?	4A(K-2)#2: The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. **The sun,** moon, and stars all **appear to move slowly across the sky.**	*Modified Sharing Ideas* (Use teacher-generated sheet available on the electronic curriculum.) Class discussion of *Checking Understanding* Questions 2-5 on page 67 in Student Edition (See pages 92-93 in Teacher's Edition.)	***Modified Sharing Ideas*** • Do students know shadows can change without a person moving because the <u>sun</u> moves across the sky? ***Checking Understanding*** • Do students generalize that the sun appears to move across the sky? • Are students able to connect the changes in shadow length with changes in the sun's position?

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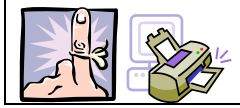
<u>Lesson 4: Star Gazing</u> **Pacing Suggestions:** **Day 1-** *Star Pictures* (story) on page 101 in Teacher's Edition **Day 2-** *Making Constellations* on pages 102-104 **Day 3-** *Session 3* on pages 104-106 in Teacher's Edition **Day 4-** *Session 4* on pages 106 & 107 in Teacher's Edition **Teacher Resources:** 	Throughout the night, what appears to happen to the stars? How are stars positioned in the sky? How many stars are in the sky? How is the model (constellations in a can) different from the real thing (stars in the sky)?	4A(K-2)#2: The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. **The** sun, moon, and **stars** all **appear to move slowly across the sky.** 4A(K-2)#1: There are more stars in the sky than anyone can easily count, but they are not scattered evenly, and they are not all the same in brightness or color. 11B(K-2)#2: A model of something is different from the real thing but can be used to learn something about the real thing.	*Sharing Ideas* (See page 107 in Teacher's Edition. Use teacher-generated sheet available on electronic curriculum.)	See pages 106-107 in Teacher's Edition for detail information about student responses. Confirm students' recognition of the vast number of stars in the sky, as opposed to the few on the maps, and that stars are not evenly scattered throughout the sky.

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<u>Lesson 5: Star Guides</u> **Pacing Suggestions:** **Day 1-** *Session 1* on pages 113-115 in Teacher's Edition **Day 2-** *Making a Dipper and Queen Finder* on pages 115 & 116 in Teacher's Edition *The Legend of Queen Cassiopeia* (optional) **Day 3-** *Annie Jump* story *& Checking Understanding* on pages 117, 120, & 121 in Teacher's Edition **Day 4-** Star Lab **Teacher Resources:** 	Throughout the night, what appears to happen to the stars?	4A(K-2)#2: The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. The sun**,** moon, and **stars** all **appear to move slowly across the sky.**	Class discussion of *Checking Understanding* Questions 3 & 4 on page103 in Student Edition (See page 121 in Teacher's Edition.)	See page 121 in Teacher's Edition for detailed information about student responses.

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<u>Lesson 6: Moon Movies</u> *****Lesson can't be taught until Moon Journals are completed. ***** **Pacing Suggestions:** **Day 1-** *Checking Understanding* on page 49 in Student Edition & *Finding Patterns* on pages 105-108 in Student Edition **Day 2-** *Moon Movies* on pages 127-128 in Teacher's Edition **Day 3-** *Checking Understanding* on pages 129 & 130 in Teacher's Edition **Teacher Resources:** 	What does the moon look like throughout a month?	4A(K-2)#3: The moon looks a little different every day, but looks the same again about every four weeks.	Class discussion of *Checking Understanding* Questions 1-5 on page 49 in Student Edition (See pages 74-75 in Teacher's Edition.) *Checking Understanding* Questions 1-4 on page 111 in Student Edition (See pages 129 & 130 on Teacher's Edition.)	***Checking Understanding*** See page 75 in Teacher's Edition for detailed information about student responses. ***Checking Understanding*** See pages 129-130 in Teacher's Edition for detailed information about student responses.

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Lesson 7: Patterns in the Sky (Optional Lesson—See "Teacher Tips" for criteria in determining whether lesson needs to be taught.) **Teacher Resources:** 	How do the sun, moon, and stars appear to move in the sky?	4A(K-2)#2: The sun can be seen only in the daytime, **but the moon can be seen sometimes at night and sometimes during the day**. **The sun, moon, and stars all appear to move slowly across the sky.**	Questions 1-3 on page 115 in Student Edition (See pages 136-137 in Teacher's Edition.)	• For each question, do students identify a change in position of the sun, moon, and stars? • For Question 2, bullet #2, do students state that the moon can be seen at different times?
Lesson 8: Movement in the Sky—Why? **SKIP LESSON**		Addresses a (3-5) benchmark		
Lesson 9: Other Objects in the Sky **SKIP LESSON**		No benchmark matches		

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Post-Unit Assessment **Pacing Suggestions:** See "Tips" under "Teacher Resources" **Teacher Resources:** 	When can the sun be seen in the sky? When can the moon be seen in the sky? How do the sun, moon, and stars appear to move in the sky? What does the moon look like throughout a month? How are stars positioned in the sky?	4A(K-2)#2: The sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day. The sun, moon, and stars all appear to move slowly across the sky. 4A(K-2)#3: The moon looks a little different every day, but looks the same again about every four weeks. 11C(K-2)#1: Things change in some ways and stay the same in some ways. 4A(K-2)#1: There are more stars in the sky than anyone can easily count, but they are not scattered evenly, and they are not all the same in brightness or color.	*End-of-Unit Assessment* available under "Teacher Resources"	See answer key available under "Teacher Resources."