

NGSS competencies / UTS Classroom Lessons	Points	Dinosaurs	From seed to flower	Glaciers	Day and Night	Fossils	Our Solar System	Volcanoes in action	Plants for sustainable living	Ecosystems	Water Cycle	Create Oceans	Africa Tour	Tectonic plates	Animal Defense Mechanisms	Habitats	Farm	Trip to Mars	Scale	Herd animals	Seasons	Colors	Places to live	Facets	Mammals	
1. Scientific and Engineering Practices		5	9	8	4	6	6	6	6	8	7	7	6	9	5	6	6	6	9	7	8	5	8	7	5	6
Asking questions (for science) and defining problems (for engineering)	20	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Developing and using models	6							✓				✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
Planning and carrying out investigations	9	✓	✓				✓		✓		✓							✓	✓	✓	✓	✓	✓	✓	✓	✓
Analyzing and interpreting data	16	✓	✓	✓	✓	✓	✓	✓			✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
Using mathematics and computational thinking	4			✓			✓										✓		✓							
Constructing explanations (for science) and designing solutions (for engineering)	8		✓					✓			✓		✓						✓	✓	✓	✓	✓	✓	✓	✓
Engaging in argument from evidence	7			✓					✓	✓			✓				✓			✓			✓	✓	✓	✓
Obtaining, evaluating, and communicating information	10		✓				✓					✓	✓				✓		✓	✓	✓	✓	✓	✓	✓	✓
2. Crosscutting Concepts																										
Patterns	12		✓		✓	✓	✓						✓	✓		✓		✓	✓	✓	✓	✓				✓
Cause and effect: Mechanism and explanation	10			✓					✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Scale, proportion, and quantity	6	✓		✓		✓		✓										✓	✓							✓
Systems and system models	6								✓	✓		✓	✓			✓			✓	✓						
Energy and matter: Flows, cycles, and conservation	0																									
Structure and function	2		✓																				✓			
Stability and change	6			✓						✓	✓		✓				✓						✓			✓
3. Disciplinary Core Ideas																										
Physical Sciences																										
PS1: Matter and its interactions	0																									
PS2: Motion and stability: Forces and interactions	0																									
PS3: Energy	0																									
PS4: Waves and their applications in technologies for information transfer	1																									✓
Life Sciences																										
LS1: From molecules to organisms: Structures and processes	4		✓												✓					✓						✓
LS2: Ecosystems: Interactions, energy, and dynamics	2								✓	✓																
LS3: Heredity: Inheritance and variation of traits	3		✓								✓				✓											
LS4: Biological evolution: Unity and diversity	6	✓				✓				✓							✓	✓							✓	
Earth and Space Sciences																										
ESS1: Earth's place in the universe	5				✓	✓	✓	✓																		✓
ESS2: Earth's systems	5								✓				✓	✓					✓	✓						
ESS3: Earth and human activity	8			✓					✓			✓	✓	✓			✓		✓	✓				✓		
Engineering, Technology, and Applications of Science																										
ETS1: Engineering design	3																✓		✓						✓	
ETS2: Links among engineering, technology, science, and society	0																									

iSandBOX NGSS Competency Matrix
This competency matrix is designed for K-3 teachers who use the projected reality station iSandBOX with UTS Classroom software installed on it. This matrix will help you smoothly incorporate the use of this device into your lessons to make them more engaging and valuable for your students. With the help of this matrix, you will be able to select a suitable ready-made lesson for your students, depending on the current curriculum theme and some competencies your students have not sufficiently developed yet. You can choose from 25 ready-made NGSS-aligned lessons that:

- Can be easily integrated into the learning process
- Include all the necessary materials, theory and notes to the teacher on how to explain each concept to students to achieve mastery
- Use interactive gamification techniques and elements the number of which increases towards the end of each lesson. This way that students don't get distracted while the teacher explains new concepts, and they can play and practice new concepts at the end of the lesson

Currently, we focus on two Disciplinary Core Ideas: Life Sciences and Earth and Space Sciences.