



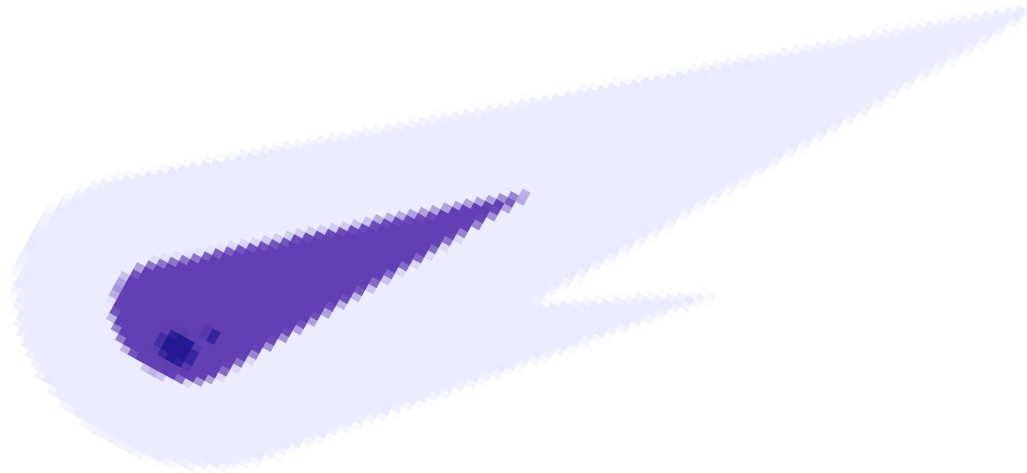
StAnD

Teacher's Manual

Chapter 1: Introduction

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7.1 Introduction to the Teacher's Manual

Welcome to the StAnD Teacher's Manual! This document, divided in eight chapters, provides a key resource within the StAnD project. The manual introduces key principles for instructional design, guided by Universal Design for Learning (UDL) principles, to help teachers adapt the resources from the StAnD Toolkit to their classroom practices and curriculum delivery, incorporating concepts like inclusion, diversity, and equity. It also presents suggestions for teaching scenarios exploring the different subjects related to StAnD's activities.

The Manual is structured into several chapters to guide teachers through the relevant topics and methodologies:

- Chapter 2 introduces the Universal Design for Learning framework that instructors can use to reduce barriers students face in the classroom and increase access to opportunities to succeed. It provides a structure for rethinking how to design effective learning experiences that support diverse learning needs.
- Chapter 3 provides an overview of the Solar System, our cosmic neighborhood. It describes the celestial objects found within our Solar System, such as the Sun, planets, moons, dwarf planets, and minor bodies. The chapter also includes a brief explanation of how the Solar System was formed.
- Chapter 4 focuses on asteroids and comets, and the regions where these minor bodies are found within our Solar System, more specifically the Main Asteroid Belt, the Kuiper Belt, and the Oort Cloud. Understanding these regions provides essential background for StAnD activities such as asteroid search campaigns and follow-up observations.
- Chapter 5 addresses the phenomena of meteors. It discusses meteoroids and their parent bodies, explores meteors and fireballs, and explains meteor showers. This information is directly relevant to StAnD activities that involve the use of meteor detection cameras, which are designed to detect fragments of asteroids entering the Earth's atmosphere.
- Chapter 6 focuses on meteorites, the objects that survive atmospheric entry and reach the Earth's surface. It covers their formation, differentiation, and composition. A significant portion of the chapter is dedicated to micrometeorites, tiny space particles that can be collected using the StAnD Micrometeorite Toolkit.
- Chapter 7 introduces the critical subject of Planetary Defence, which addresses the potential hazards posed by Near-Earth Objects (NEOs) such as asteroids and comets. It outlines the asteroid and comet impact threat and discusses key strategies like monitoring and warning. It also discusses mitigation strategies, which are methods aimed at diverting potentially hazardous objects from a collision course with our planet.
- Chapter 8 brings four Teacher Scenarios that will support teachers in presenting the above topics in the classroom.