

Alignment of Thin Film Interference Module to the Next Generation Science Standards

The Next Generation Science Standards (NGSS) were published in April 2013. They consist of statements that convey the performance expectations for students. Each performance expectation is a single statement that is built from three parts: science and engineering practices (Practices), disciplinary core ideas (DCI) and crosscutting concepts.

Since the Thin Film Module was created prior to the release of these standards one would expect that it aligns most readily to the individual statements that articulate the practices, DCIs, and crosscutting concepts. The background material, reading, and the slides from the module address the aspects of the NGSS shown in Table 1.

TABLE 1. ALIGNED PRACTICES, DISCIPLINARY CORE IDEAS, AND CROSSCUTTING CONCEPTS

PRACTICE <i>No alignments</i>	DCI <i>MS. PS4.A: When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light.</i> <i>Strong in teacher and student materials</i>	CROSSCUTTING CONCEPT <i>No alignments</i>
PRACTICE <i>No alignments</i>	DCI <i>MS. PS4.A: The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends.</i> <i>Strong in teacher and student materials</i>	CROSSCUTTING CONCEPT <i>No alignments</i>
PRACTICE <i>No alignments</i>	DCI <i>MS. PS4.A: A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media.</i> <i>Strong in teacher and student materials</i>	CROSSCUTTING CONCEPT <i>No alignments</i>
PRACTICE <i>No alignments</i>	DCI <i>HS.PS4.A: Waves can add or cancel one another as they cross, depending on their relative phase (i.e., relative position of peaks and troughs of the waves), but they emerge unaffected by each other.</i> <i>Strong in teacher and student materials</i>	CROSSCUTTING CONCEPT <i>No alignments</i>