

Curriculum Merit Checklist

Introduction

Purpose

The Curriculum Merit Checklist (CMC) is a tool to help educators evaluate curriculum. The purpose of the CMC is to evaluate the merit of a lesson or set of lessons. The merit of a lesson is the value of the written lesson (without teaching it). The CMC was created to be used as part of a curriculum evaluation or as a guideline for including best practices during curriculum development. The CMC is meant to be a flexible and helpful guide. There are terms and concepts throughout the checklist that are explained in the *descriptions* section, with links to high-quality Web resources, where available.

Intended for:

- The CMC is intended for informal educators evaluating or developing curriculum. The CMC can be useful at any point in the process, and can be applied to curriculum from the lesson level to the unit level.
- It is also intended for use with curriculum developed for K-12 classrooms as well as informal education settings.

NOT intended for:

- Teaching and classroom evaluations are not the intention of the CMC. The CMC is intended for written curriculum only.
- This list of best practices and lesson components does not represent a comprehensive list of everything a lesson or curriculum needs to be effective.
- The CMC is not intended as a “how to” guide on writing curriculum.

Development

The CMC was developed using a variety of sources and modified from a lesson evaluation guide developed by Dr. Shawn Rowe for his course *Communicating Ocean Sciences to Informal Audiences* at Oregon State University. This CMC was developed as part of a master’s thesis project on middle school marine-science curriculum development and evaluation. The CMC was used to evaluate curriculum available on the Internet on the topic of marine debris. Items included in the CMC are grounded in theory and teaching best practices, developed from primary education and evaluation literature.

How to use the CMC

Using the CMC should be easy! Check the boxes that apply to the curriculum you are evaluating and make notes where you think it’s appropriate. If something does not apply or the answer is not clear, don’t worry. Use the parts that are helpful. A lesson or curriculum does not have to have *all* these components to be effective.

Green words or phrases in the checklist can be found in the descriptions section (page 5) of the document. For more information, double-click orange headings and green links within the descriptions section to link to websites that are not affiliated with the CMC.

Curriculum Merit Checklist

Curriculum Information

Title: Click to enter title.

Topic: Click to enter topic.

Author: Click to enter author.

Date: Click to enter date.

Is the curriculum evaluated? Y N

Evaluation criteria: Click to enter evaluation criteria.

Is this curriculum free? Y N

Target Grade(s) or Age(s): Click to enter grade(s).

Number of lessons: Click to enter number.

Curriculum Organization (*outline, essential questions, goals of curriculum, etc.*):

Click to enter text.

NOTES:

Click to enter notes.

Theoretical Foundation

Learning cycle:

Problem-centered

Use of real-world problem solving

Activation

Activation of prior knowledge

Demonstration

Learning objectives are demonstrated instead of told as information

Learner guidance is built into the experience

Application

Practice and assessment are aligned to learning objectives

Problems are scaffolded

NOTES:

Click to enter notes.

Addresses multiple **learning styles** (includes multiple methods of teaching and learning)

- Verbal
- Visual
- Kinesthetic
- Collaborative

NOTES:

Click to enter notes.

Developmentally appropriate

- Developmentally appropriate

NOTES:

Click to enter notes.

Engagement

- Contains a **hook**
- Minds on**
- Metacognitive**
- Includes several levels of questioning (*scaffolded to higher-order thinking*)
- Hands on**
- Relevant to students (*students can make a personal connection, the content is clearly important to their lives, etc.; the relevance should be explicit for students*)

NOTES:

Click to enter notes.

Accuracy

- Content is accurate
- Activities are aligned to content (*engaging with the learning activities will allow students to access the content*)

NOTES:

Click to enter notes.

Structure

Objectives:

- Clearly written (*specific, measurable, easy to understand*)
- Outcomes-oriented**
- Aligned to standards**

List the standards used: Click to enter standards.

NOTES:

Click to enter notes.

Content

- Clearly written
- Includes instructor background
- Key content points are explicit

NOTES:

Click to enter notes.

Relevant practice

- Activities are aligned to objectives

NOTES:

Click to enter notes.

Assessment

- Assessment is **authentic** (*assessment allows students to demonstrate their knowledge and skills in a way that is meaningful outside the classroom*)
- Assessment criteria** is provided (*includes the level of performance required to meet the learning objective; for example, a rubric*)
- Formative** assessment(s) included (*informal assessments of student learning built into the activities*)
- Summative** assessment included (*final assessment of student learning*)

NOTES:

Click to enter notes.

Flow

- Lesson activities flow logically from one to the next

NOTES:

Click to enter notes.

Usefulness

Flexibility

- Able to be adapted for various settings/learners (*lesson can easily be adapted to different regions, physical spaces, learning styles, ages, etc.*)
- Easily **differentiated** (*the educator can easily add more structure or complexity to the lesson*)

NOTES:

Click to enter notes.

Structure

- Clear (*easy to read, navigate, and generally use*)
- Comprehensive (*contains all lesson plan pieces necessary to teach it*)

NOTES:

Click to enter notes.

Materials

- Students materials are included
- Additional materials need to be provided by the educator

NOTES: (*What is the nature of the materials; are they expensive, difficult to obtain?*)

Click to enter notes.

Descriptions

Activation of prior knowledge

Students begin any learning experiences with prior knowledge. Activating prior knowledge, or background knowledge, allows teachers to address misconceptions, build on existing knowledge with new ideas, and help students make connections and change their thinking. This activation step is one of Merrill's "first principles" (2002).

Aligned to standards

There are several sets of standards used to align lessons. Many states have standards specific to particular fields or topics. The following are some of the standards used nationally.

Common Core Standards – Common Core State Standards are K-12 academic standards in math and English language arts (ELA).

Next Generation Science Standards – The Next Generation Science Standards (NGSS) are K-12 science standards written within a framework developed by the National Research Council.

Ocean Literacy Standards – Ocean Literacy Principles were developed by scientists and science educators and include seven ocean principles, with more-specific standards for K-12 students within each principle.

Assessment criteria

Assessment criteria describe what students must do to meet the learning objective. Often, assessment criteria is presented as a rubric. The [University of Central Florida](#) has a thorough description of why rubrics are useful, particularly in assessing real-world tasks.

Authentic assessment

Authentic assessments are *real*. They represent the complexity of problem-solving that people encounter outside the classroom. Grant Wiggins (1993) describes one of the characteristics of authentic assessment as "engaging and worthy problems or questions of importance, in which students must use knowledge to fashion performances effectively and creatively. The tasks are either replicas of or analogous to the kinds of problems faced by adult citizens and consumers or professionals in the field" (p. 206). The National Education Association website houses an [Authentic Assessment Toolkit](#), with resources to understand, plan, and implement authentic assessments.

Developmentally appropriate

Curriculum that is developmentally appropriate includes content that is age-appropriate (cognitively as well as emotionally) and strategies tailored to the age of the students. Curriculum should also contain texts at accessible reading levels. Although the term is commonly associated with early childhood education, the idea is applicable to K-12.

Differentiated

Differentiated instruction addresses the individual needs of students. Carol Ann Tomlinson (2013) defines differentiated instruction as "an instructional model that provides guidance for teachers in addressing student differences in readiness, interest, and learning profile, with the goal of maximizing the capacity of each learner" (p. 287).

Formative assessment

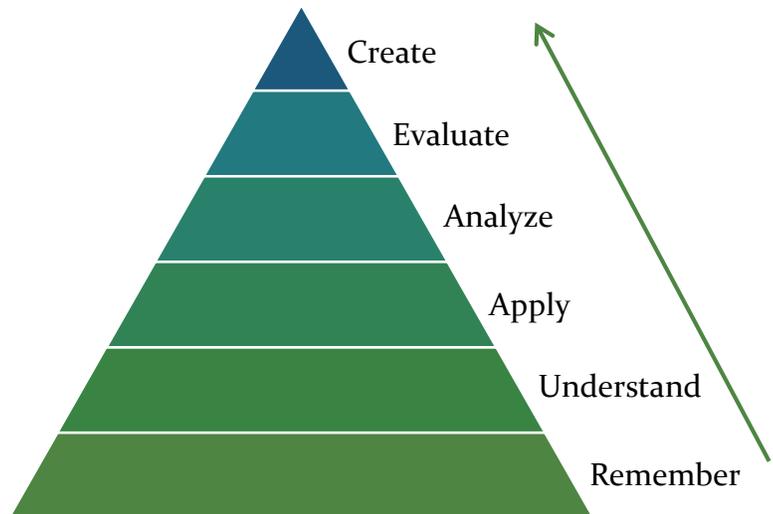
Formative assessment occurs throughout the curriculum. Formative assessments range from checking students' understanding during a lesson to a more formal quiz that tells the educator what students know. The information collected by formative assessments can help the educator address any misunderstandings, plan more purposefully for future lessons, and reteach concepts as needed.

Hands-on

Hands-on lessons engage students with physical materials that allow them to explore or demonstrate concepts. Conducting an experiment, using manipulatives, or exploring a physical object are examples of hands-on activities.

Higher-order thinking

Higher-order thinking is based on Bloom's Taxonomy, developed in 1956. This classification system moves from knowledge as a prerequisite to other skills, up to evaluation. Skills beyond knowledge and higher on the pyramid diagram are considered "higher-order thinking skills." The taxonomy was updated in 2001 to make it more relevant for modern teaching and learning. The [Vanderbilt Center for Teaching](#) describes Bloom's Taxonomy and includes additional resources.



Revised Bloom's Taxonomy adapted from Anderson & Krathwohl, 2001

Hook

The hook in a lesson plan is the first activity that engages students and gets them invested in the rest of the learning experience. An effective hook activity is important because it helps students understand why learning about a particular topic is important and builds interest. A hook can be a puzzle, discrepant event, demonstration, or mystery related to the essential question of the lesson (Wiggins & McTighe, 2005).

Learning cycle

David Merrill's model of the five first principles of instruction is based on a review of learning models and theories. The principles include: (1) engaging students in real-world problems solving, (2) activating prior knowledge, (3) demonstrating knowledge, (4) applying knowledge, and (5) facilitating students' integration of the new knowledge into their thinking. These five principles are described as separate terms in this document. The [2002 paper](#) can be found at David Merrill's website, mdavidmerrill.com.

Learning objectives

Learning objectives are specific statements of what students should be able to do at the end of a learning experience. [Carnegie Mellon](#) provides a description of measurable, student-centered objectives. A more specific guide on writing learning objectives and questions based on Bloom's Taxonomy can be found at [UNC Charlotte's](#) Center for Teaching and Learning.

Learning Styles

Learning styles are learner preferences for a certain type of learning environment (Romanelli, Bird, & Ryan, 2009). There is debate in the education literature, however, about whether or not learning styles are an effective framework (Pashler, McDaniel, Rohrer, & Bjork, 2008). In this document, learning style refers to the acknowledgment of different learner preferences and the merit of using various modes of instruction. For a description and brief discussion of the debate within the research community, see [Vanderbilt University's "learning styles" website](#).

Metacognitive

Lessons that have metacognitive components allow students opportunities to reflect on how they are thinking about concepts and the process of learning ([Vanderbilt, 2016](#)). Metacognition can be promoted in lessons through various strategies, including connecting concepts to students' prior knowledge and explaining how they developed responses to questions ([Teaching Excellence in Adult Literacy](#)).

Minds-on

Minds-on learning is associated with inquiry learning and is structured to help students *think* about the content of the curriculum. Inquiry allows students to ask questions and analyze data to make conclusions (Bell, Smetana, & Binns, 2005). Inquiry is not applicable only in science classrooms; the process of inquiry can be applied broadly across disciplines ([University of Florida](#)).

Objectives

Learning objectives are a statement of what students should be able to do by the end of the lesson. Objectives are specific and measurable and provide a goal for students ([Carnegie Mellon](#)).

Outcomes-oriented

Curriculum that is outcomes-oriented is based on the learning outcomes, not the activities that make up the lessons.

Real-world problem solving

Real-world problem solving involves engaging students in true, meaningful questions about their world. It is related to experiential learning, which allows students to apply their knowledge to a new, real situation ([University of Texas at Austin](#)).

Scaffolding

Scaffolding is the process of using temporary support to gradually help learners in their tasks ([IRIS Center for Training Enhancements, 2005](#) & [Northern Illinois University](#)). The concept can apply to any learning task and involves the teacher gradually releasing responsibility of the task to the student.

Summative assessment

Summative assessments measure what students have learned at the end of teaching. The goal of summative assessments is not to inform further instruction (this is formative assessment), but to measure an end point. Examples of summative assessments include final exams, final papers, or capstone projects (Garrison & Ehringhaus, 2009).

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