
Unit
Appraisal
Annotated
Grade 7

Prologue:

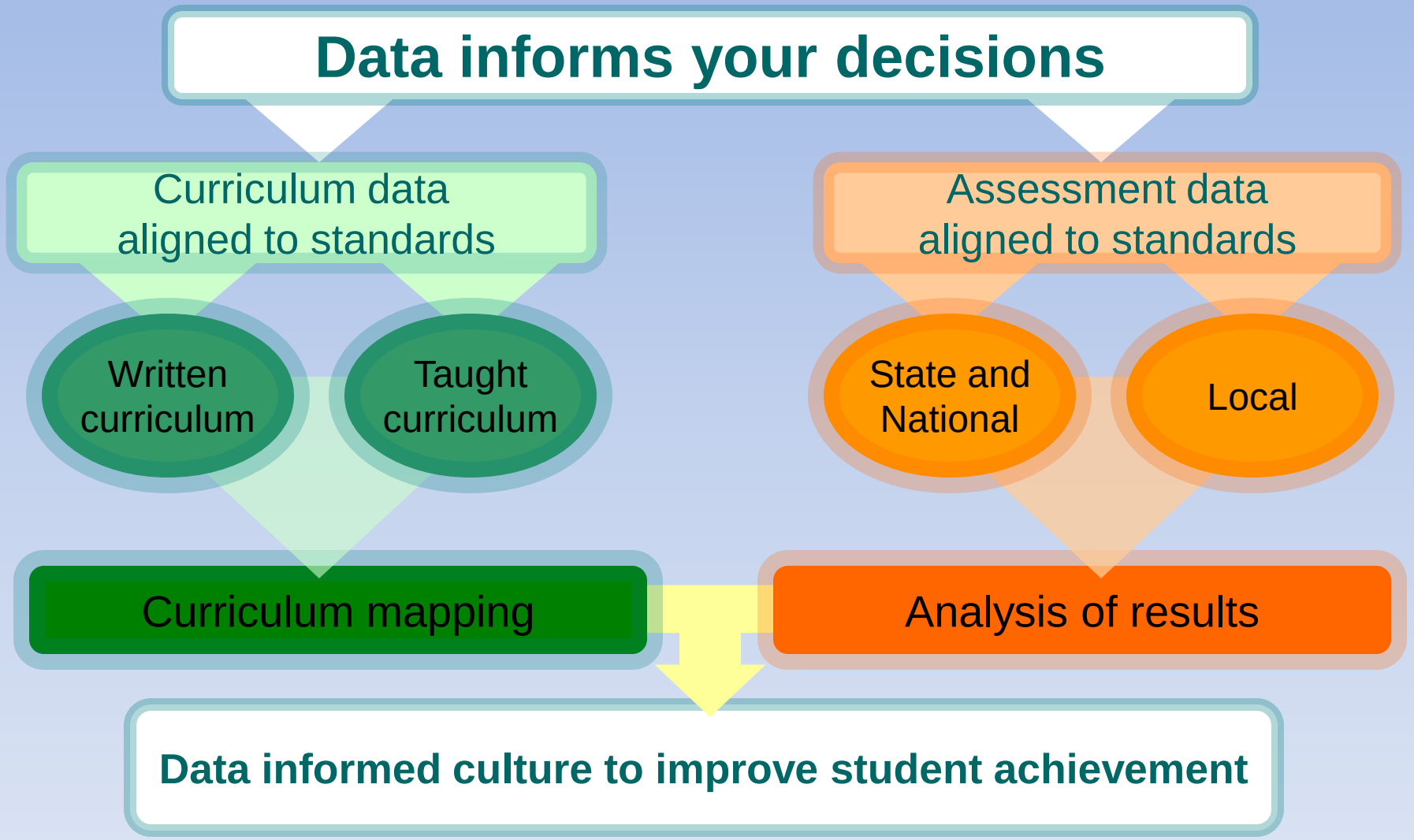
Curriculum Design, for many teachers, is a new space. In a general sense, the curriculum design work that is being engaged in right now is far above the instructional practices of the past.

This is also meant to be a baseline from which all future curriculum work will develop. Being thoughtful and transparent in our work allows exponential growth in professional practice and student achievement.

Many, many thanks to the teacher(s) who submitted this plan so that we can nurture the seeds they've planted.

Why do this?

To Support Data Informed Decision Making


Data informs your decisions
Curriculum data aligned to standards
Assessment data aligned to standards
Written curriculum
Taught curriculum
State and National
Local
Curriculum mapping
Analysis of results
Data informed culture to improve student achievement

"*Unit Plans (Maps) equal data* … Data equals facts and figures … Facts and figures show trends … And with this knowledge, we can give 'all of the above' meaning by looking at the trends and comparing it to other data bases."

Bena Kallick, Curriculum Mapping Conference, 2003

Evidence Vs Claim

Caveat:

This annotation represents a look through several lenses of opportunities for improvement. The depth of this annotation is specifically for the purpose of this analysis only and does not necessarily represent what would be involved in a curriculum coaching moment. Critical decisions would have to be made around "do now" vs. "explore later" depending on several variables that could include: delivery of the unit plan, collaboration and consensus, alignment of the unit as a whole versus a pinpoint alignment moment, opportunities for growth over time, further fleshing out of details related to curriculum practice vs. design, etc.

C

Clarity and Transparency are important. Is what you intend apparent to others?

L

Is **Lively** and Dynamic instruction apparent?

E

Do your assessments provide **Evidence** that skills have been mastered? Big Ideas answered?

A

Does your **Alignment** represent a balance in content, skills, and assessments?

R

Compared to the previous version of your unit, is the new one **Robust**, Hearty, and Strong?

May

Co2 Car -

22 Days - Out of a 29 Day Rotation, 6 Rotations a Year

Essential Questions	Content	Skills	Assessments	Lessons	Supplemental Information	Standards
How do you apply Newton's laws of phyics to the design of a co2 car How do you use the tools and equipment in the technology room to complete the Co2 car project How do you make a two view drawing to generate a pattern for a Co2 car	How to use a ruler to fabricate a co2 car How to use the equipment in the room to develop and fabricate a co2 car that is based on Newton's Laws of Physics Students will read the course booklet to learn the step by step procedure for completing the Co2 car If needed, as a group demonstrate the procedure for completing the Co2 car Students will use the course booklet to emphasize vocabulary so that they will understand the terms If needed, go through the vocabulary as a group if students are struggling.	Make a Co2 Car Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they relate to the fabrication of the Co2 car Follow precisely a multistep procedure when completing the fabrication of the Co2 car	Co2 Car	Co2 Car Introduction Understanding the specifications and how to make a two view drawing Safety How to use the band saw to make the blank for the Co2 car How to drill an axle hole How to drill a Co2 hole How to use a band saw to cut out the side view of the Co2 car How to use a band saw to cut out the top view of a Co2 car How to use the 6" and 1" belt sanders How to use the spindle sander How to hand sand the Co2 car How to use spackle to fill unwanted holes in the Co2 car How to Paint - Primer How to Paint - Finish Coat How to paint pin stripes and graphics How to install axles and screw eyes		MST.I.01.PI.C.01 ~ MATHEMATICAL ANALYSIS ~ apply mathematical knowledge to solve real-world problems and problems that arise from the investigation of mathematical ideas, using representations such as pictures, charts, and tables. MST.I.01.PI.F.01 ~ SCIENTIFIC INQUIRY ~ design charts, tables, graphs and other representations of observations in conventional and creative ways to help them address their research question or hypothesis. MST.I.01.PI.G.03 ~ ENGINEERING DESIGN ~ consider constraints and generate several ideas for alternative solutions, using group and individual ideation techniques (group discussion, brainstorming, forced connections, role play); defer judgment until a number of ideas have been generated; evaluate (critique) ideas; and explain why the chosen solution is optimal. MST.I.01.PI.G.04 ~ ENGINEERING DESIGN ~ develop plans, including drawings with measurements and details of construction, and construct a model of the solution, exhibiting a degree of craftsmanship. MST.I.06.PI.B.01 ~ MODEL ~ select an appropriate model to begin the search for answers or solutions to a question or problem. RST.6-8.3 ~ Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. RST.6-8.4 ~ Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. T.I.05.PI.A.04 ~ develop plans, including drawings with measurements and details of construction, and construct a model of the solution, exhibiting a degree of craftsmanship T.I.05.PI.B.02 ~ use a variety of hand tools and machines to change materials into new forms through forming, separating, and combining processes, and processes which cause internal change to occur T.I.05.PI.G.03 ~ assume leadership responsibilities within a structured group activity

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- **Clarity:** Depending on associated supplemental information, another technology teacher could likely teach from this unit.
- **Lively and Robust:** Based on what is included here, there is evidence of engagement in places. While the depth may be relative, the degree of depth seems to be shallow in what is captured here, particularly when considering the Essential Questions, which have specific answers.
- **Evidence:** Clearly, the Co2 car is the culminating project based piece and would represent big picture learning. Evidence is needed of mastery of individual skills leading to the final product.
- **Alignment:** While the reader can speculate a reference to the standards through the content, skills, and activities, there is not a specific enough alignment to the standards represented here.

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Note: This analysis is primarily among the major curricular elements: standards, content, skills, and assessments. What is represented in the lessons section should be a descriptive and articulated action plan as informed from the standards, based on broken apart content and skills within a "Co2 car" frame.

CONTENT: Most of what is represented in the content column is more akin to a skill, what the students have to DO versus what they have to KNOW. It is certainly acceptable to frame the "KNOW" information around the framework of the assessment, in this case, the "Co2 car," but those pieces of content should come from the language of the standard. If the standard is asking students to know about mathematical knowledge, real-world problems, visual representations, solution fluency, idea management, construction planning, a variety of hand tools, and leadership…then those content pieces should be in the content column.

Skills: See the handout on writing skill statements. In the statements in the skills column, instructional targets are missing.

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It is apparent from the information given that the teacher is addressing some components of several standards representing only a loose alignment to them. Even the standards that have a higher degree of specificity need to be addressed with greater depth.

The standards, collectively, describe a problem solving approach to learning where multiple solutions are theorized. Those theories lead to specific designs in pursuit of a viable solution. The standards indicate a high degree of drawing conclusions based on evidence, forcing connections in the building of hypotheses, and carrying out student designed solutions to determine if they will work. This unit plan represents the construction of a vehicle with known steps and outcomes, diminishing the critical thinking that is demanded by the standards.

Endnote:

While there may be several areas of improvement in this unit plan, the critical "do now" element is one of understanding what the standards are asking students to know and be able to do. There is an opportunity here to engage a new essential question around the construction of the "Co2 Car" and WHY it would be important to know how one worked. As students explored the essential pieces of the construction of the car, some attention needs to be paid to the critical thinking, "what if" zone for modifications to the known plan. The "explore later but still important" zone here would be around checkpoint assessments to determine if the processes for problem solving, critical thinking, safety, etc. were being met proficiently. The car itself as a product is inconsequential to the processes that got the students to create the product. Further "explore later" moments would include a tighter alignment among the unit elements and the development of specific vocabulary instruction that is more articulate than "going through vocabulary."