WASHINGTON STEM

STEM Education Innovation Alliance Recommendations

Phase 1 Iteration, May 2024

(living slide deck will be updated during phases 2 and 3 as deliverables are met)

DOCUMENT LINKS

- **Anticipated Outcomes**
- **STEM Alliance Meeting Slides 3.5.24**
- **Phase 1** - March to May 2024
- **Phase 2** - May to June 2024
- **Phase 3** - June to August 2024

ANTICIPATED OUTCOMES

STEM Alliance and Related Statutes

RCW 28A.188.010 - **STEM literacy**
"...the ability to identify, apply, and integrate concepts from science, technology, engineering, and mathematics to understand complex problems and to innovate to solve them."

RCW 28A.188.020 - **Statewide director for math, science and technology - Duties - Reporting**
OSPI shall…"provide support for statewide coordination for math, science, and technology, including employing a statewide director for math, science, and technology."

RCW 28A.188.030 - STEM education innovation alliance
"The STEM education innovation alliance is established

1. to advise the governor…
2. …and to provide vision, guidance, assistance, and advice to support the initiatives under this chapter…
3. …[using a] comprehensive STEM framework…
4. …[and] to develop a STEM education report card.

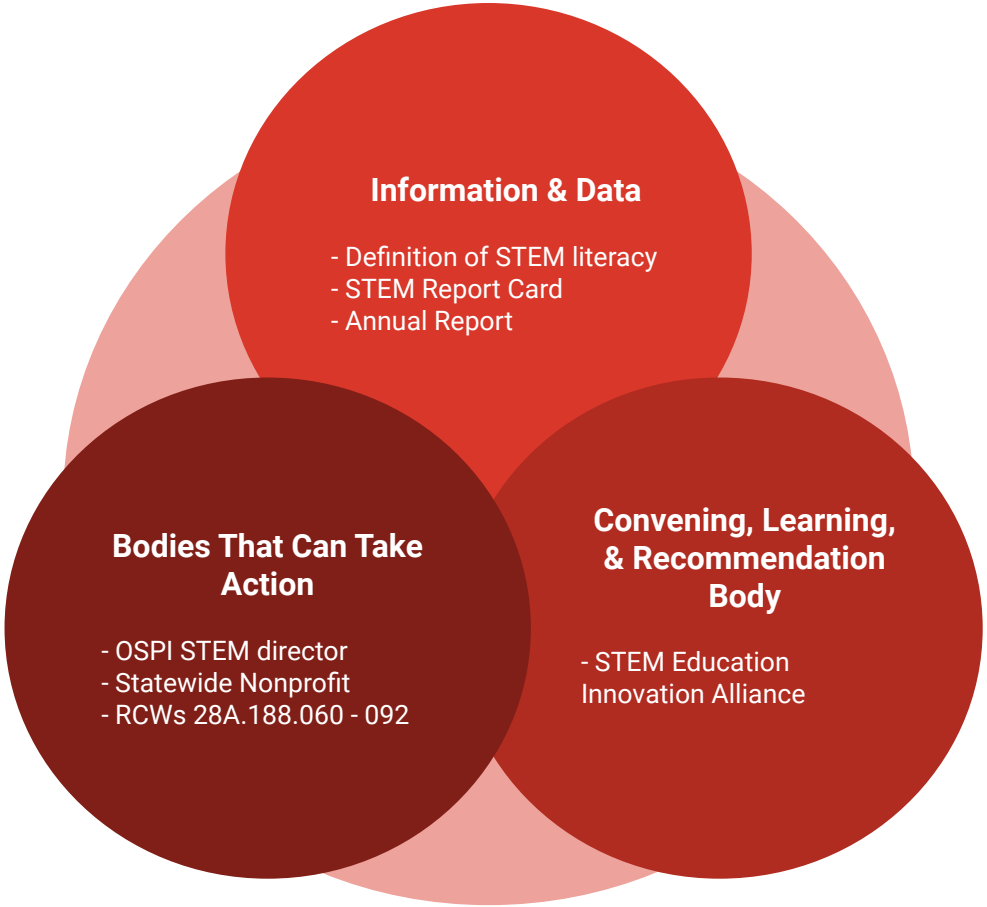
RCW 28A.188.040 - **STEM education report card - Coordination of data collection and analysis - Reports by education agencies and the employment security department.**
"The STEM education innovation alliance shall develop a STEM education report card:

CONT. - STEM Alliance and Related Statutes

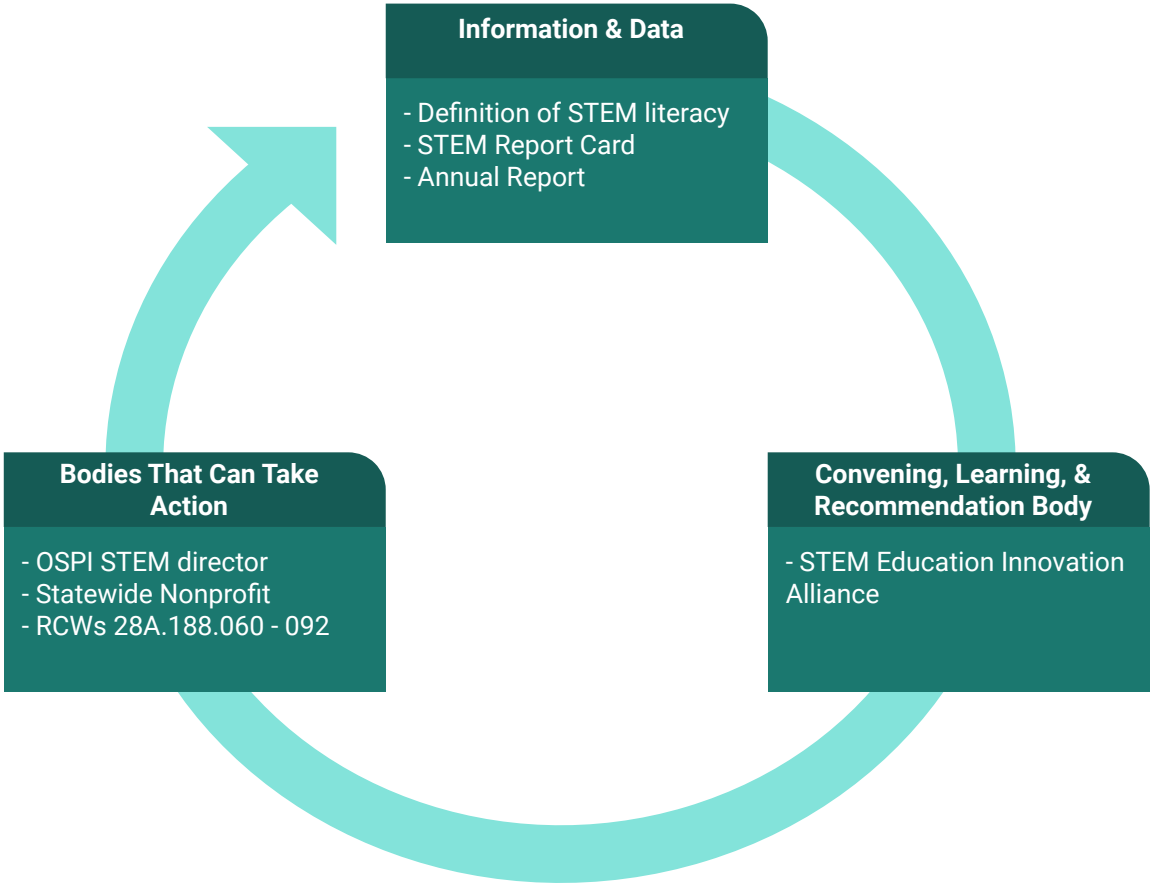
1. The report card must:
    a. Recent data … indicators and measure of STEM framework…
    b. …state education agencies.,.. Activities and resources [alignment] and support… STEM framework…
    c. Data… current and project STEM job openings..
    d. …displayed on website…
2. a. …education data center (RCW 43.41.400)... coordinate data collection and analysis…
    b. …state education agencies must report annually… [on} align with and support the STEM framework… must use common metric… designed by the education data center and STEM education innovation alliance…
    c. …[include] annual report on current and project job opening in STEM fields…
3. STEM education innovation alliance… publish first report… by January 10, 2014.. Updated [report].. by bach January 10th there after

RCW 28A.188.050 - Statewide STEM Organization

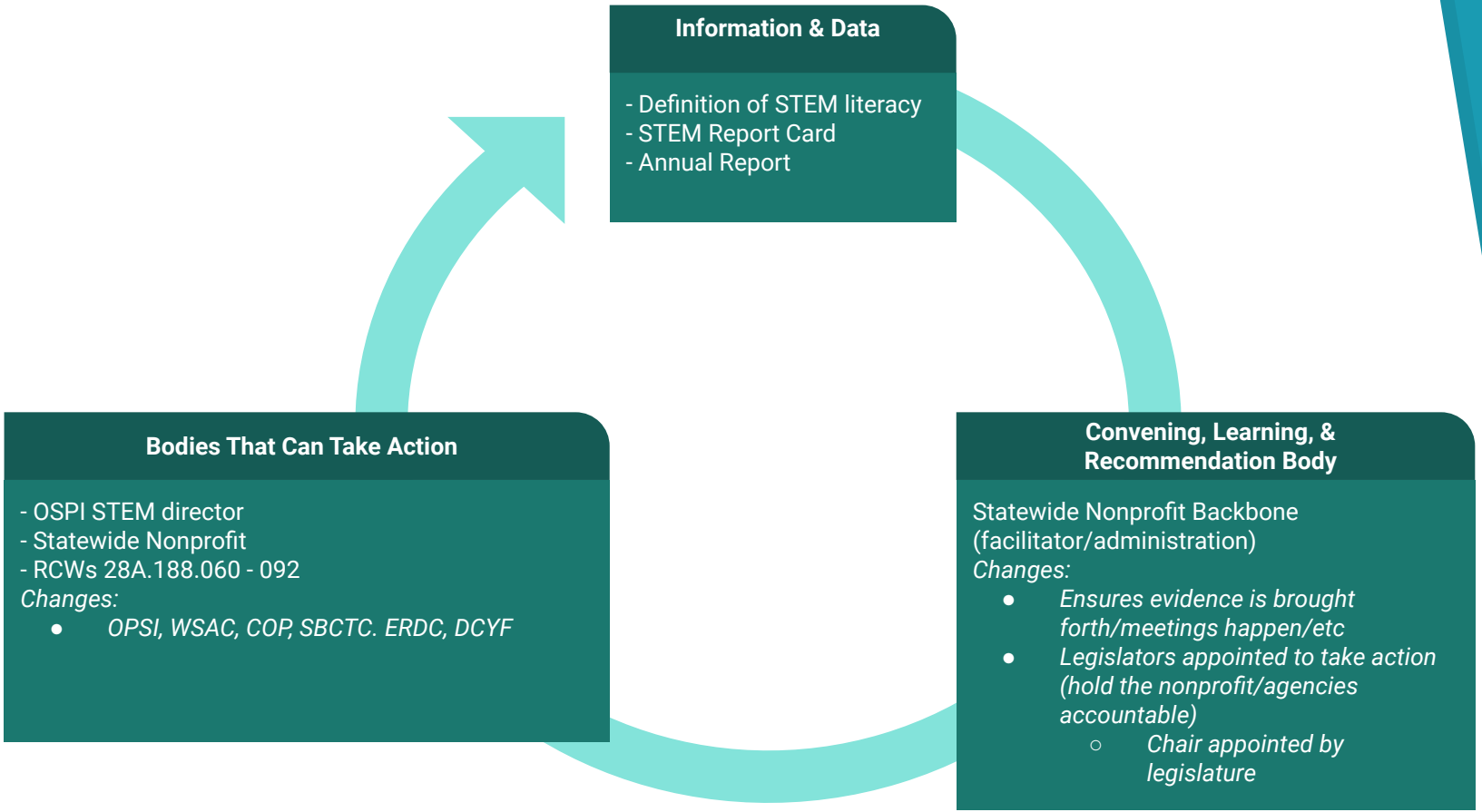
OFM shall contract with "...a statewide nonprofit organization with expertise in promoting and supporting STEM education from early learning through postsecondary education. The purpose of the contract is to identify, test, and develop scalable, cost-effective, and evidence-based approaches for increasing learning opportunities and improving educational outcomes in STEM that are aligned with the STEM framework for action and accountability."



STEM Alliance and Related Statutes: Current Ecosystem



STEM Alliance and Related Statutes: Relationship Intent



STEM Alliance and Related Statutes: Relationship Intent

STEM Alliance Meeting Slides

March 5, 2024

STEM Education Alliance Preparing for the Future

Lynne K. Varner & Jenée Myers Twitchell, Washington STEM

John Aultman, Governor's Office

Framing

Framing for the Day

Context: Stepping Back & Assessing What we Need Next

Recall: Original Purpose, Goals, and Legislation of STEM Alliance

Recall: Recent Feedback & Working Groups

Proposed Next Steps to Envision Future of Alliance

Recall: STEM Alliance Original Purpose

[RCW 28A.188.030]

“The STEM education innovation alliance is established

1. to advise the governor…
2. …and to provide vision, guidance, assistance, and advice to support the initiatives under this chapter…
3. …[using a] comprehensive STEM framework…
4. …[and] to develop a STEM education report card.

Recall: Original 2013 Framework

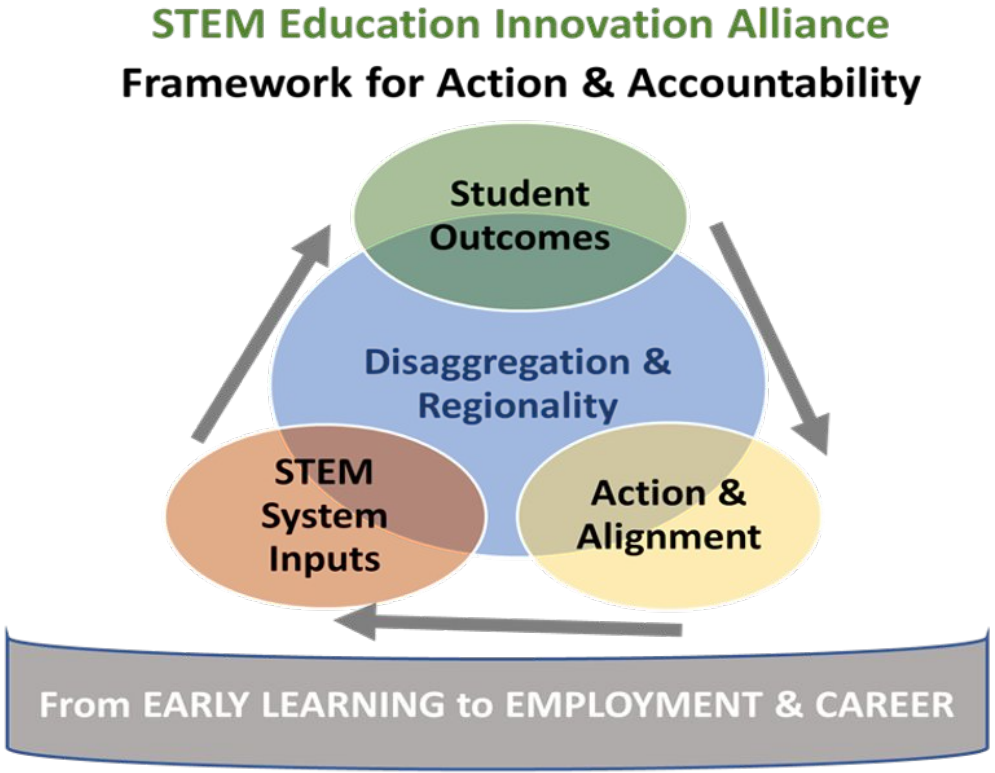
EARLY LEARNING-HIGH SCHOOL STUDENTS

EARLY LEARNING-HIGH SCHOOL EDUCATORS

POST SECONDARY AND EMPLOYERS

ALIGNED SYSTEMS

2022 Updated Framework



Summary of Added/Proposed for Replacement STEM Report Card Metrics Proposed (2022)

- STEM coursetaking (including gatekeeping course)
- Dual Credit coursetaking and use
- Student experiences (surveys & qualitative measures)
- WA originators who have gotten jobs in STEM sectors/industries

STUDENT STEM OUTCOMES

- Current & Projected STEM job openings
- K-12 STEM course availability
- Dual Credit course availability

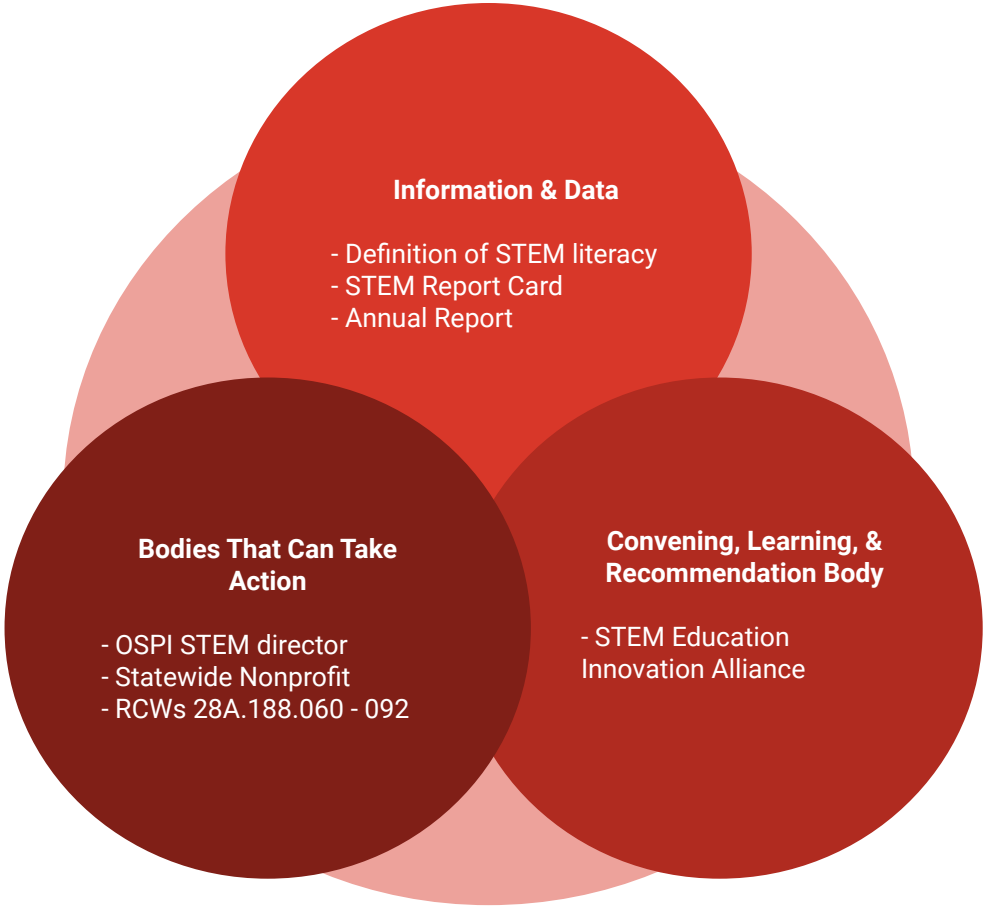
STEM SYSTEM INPUTS

- Disaggregation (K-12 originators, demogs, geography, programs, etc)

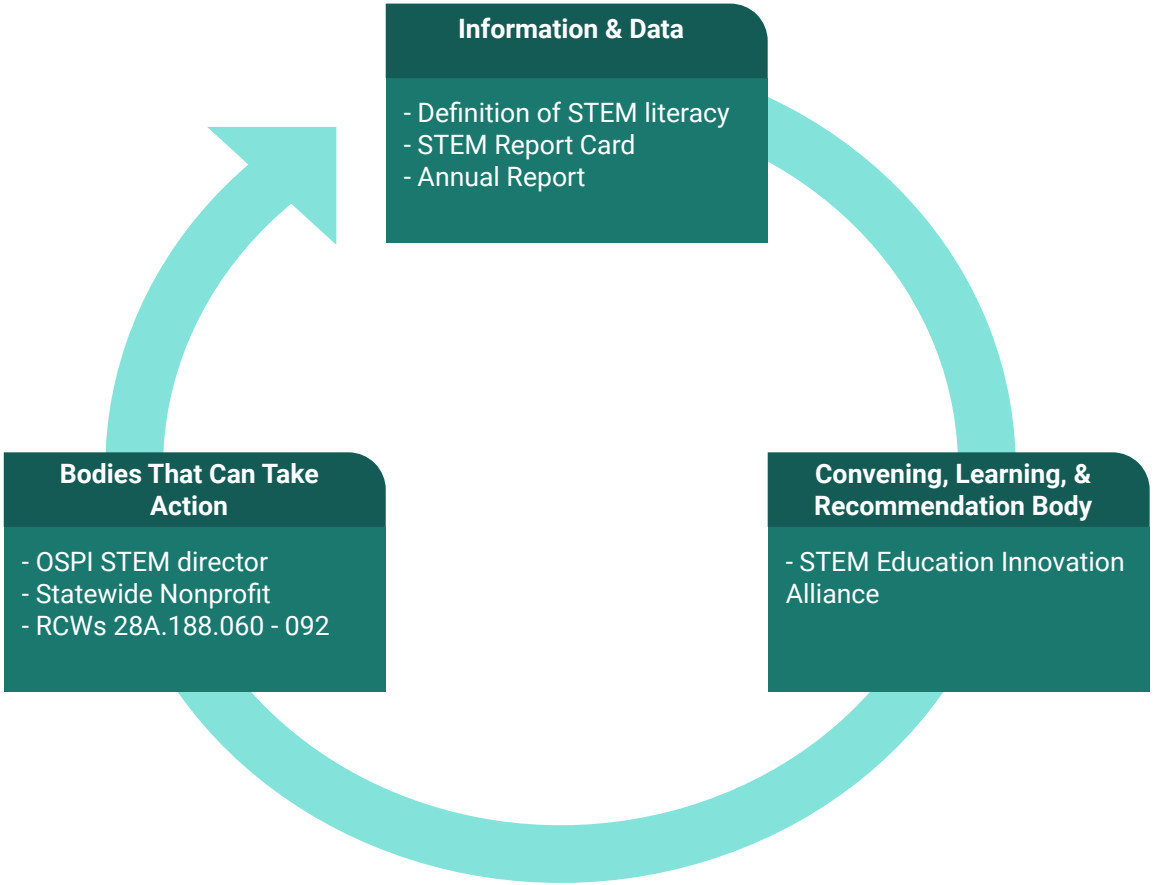
DISAGGREGATION & REGIONALITY

- Ensuring complementary reports and resources available in one place

ACTION & ALIGNMENT



STEM Alliance and Related Statutes: Current Ecosystem



STEM Alliance and Related Statutes: Relationship Intent

Proposed Next Steps & Feedback

1. Gather Complete Summary of Alliance Activities & Outcomes (to date)
2. Obtain Feedback on Current & Future STEM Needs from a body like this
3. Co-develop Recommendations for “Vehicle” of STEM body
4. Provide Roadmap & Recommendations to Next Governor

Prompt (in the Teams chat): What is missing? What/who should we consider? How should we go about envisioning the next iteration, future needs, and future work of a group like ours to ensure equity & success in STEM for our students & our state?

PHASE 1 ACTIVITIES

(March to May 2024)

Timeline of STEM Alliance activities, investments, policy, and data. *(landscape/knowledge to date/desk research)*

2013: STEM Innovation Alliance is formed in statute.

2014: Governor Inslee formally appointed members and the STEM Alliance adopted the Washington STEM Framework for Accountability.

2015: First Annual Report "STEM Benchmark Report Card" produced and recommendations to the Governor.

2016: STEM Alliance Strategic Plan Produced "Vision 2021: Investing in a Future Ready Washington" **(Adopted in 2017)**

2017: "The Swiss Example" and Governor's Summit on Career Connected Learning

2018: Science, Climate, and the Environment

2019: "Advocating for Future Ready STEM Education" and Career Connect Washington

Timeline of STEM Alliance activities, investments, policy, and data. *(landscape/knowledge to date/desk research)*

2020: Early Math Strategies and the STEM Alliance Roadmap (COVID 19) and State of Innovation Challenge

2021: First set of Legislative Recommendations direct to Office of Financial Management and STEM Data and Metrics Subcommittee

2022: STEM Dashboard Framework and Metrics

2023: STEM Alliance: Past and Future

Research and Resources:

STEM Alliance Report Cards from 2015-2023

STEM Supply and Demand Dashboard

Landscape and Knowledge Gathered to Date

2022

- 2022 Draft Legislative Recommendations
- Washington STEM Computer Science Plan Presentation

2021

- STEM Education Alliance Data & Metrics Subcommittee
- STEM Alliance Recommendations to Office of Financial Management

Feedback from Chat from STEM Alliance

- *You are what you measure, the evolution of the report card to increasingly measure what matters is critical.*
- *Defining the specific outcome, work backwards from there to identify the necessary actions and resources. Then determine how the people and organizations represented here should organize in support of those actions.*
- *Structured opportunities for collaboration among members*
- *Survey members - what we do, why we do it and how and what it means for the State*
- *We have one of the lowest higher ed availability in the nation. We must improve this or we'll continue to be a net importer of talent. That means people raised here, don't have the opportunity to enjoy the prosperity our state enjoys.*

Who are we going to be talking to in Phase 2

Invitees will be Alliance Members, and key partners which include members of industry, school districts, funders, agencies, and community partners. The full list can be found here.

- Alliance Member listening session: Wednesday, June 5 from 12pm-1pm

- ***Late June (likely 6/26): STEM Alliance Themes Discussion & Work Session on recommendations and vehicle discussion***
- ***Final report presentation at September meeting***

Padlet for collecting feedback & insights can be found here

Next Steps

- Washington STEM will communicate with Alliance Members and key partners the opportunities to engage.
- Washington STEM will synthesize the feedback into the living slide deck.
- Washington STEM, WSAC, and the Governor's office will meet in late June to review.

PHASE 2 ACTIVITIES

(May to June 2024)

STEM Education Innovation Alliance Meeting

June 26, 2024

Welcome & Framing

Lynne K. Varner, CEO, Washington STEM

Agenda

Framing for the Day

Context: Themes from the Feedback

Recall: STEM Alliance Framework

Work Session: Recommendations to Envision Future of Alliance

Next Steps

STEM Alliance Recommendations Work Session

Jayme Shoun, Policy Director, Washington STEM

Jenee Myers-Twitchell, Chief Impact Officer, Washington STEM

Min Hwangbo, Impact Director, Washington STEM

June 5 Feedback Session Themes

- Action–including Alliance format, platform, and accountability
- Audience
- Washington Jobs for Washington Kids/WA State Originators
- Access to Higher Education
- Educator Workforce
- Data Infrastructure
- Policy

Potential Indicators of focus:

- Leveraging of AI and ensuring equity of access and use of AI
- Math & Science teaching and learning
- Preparation for and support for access to Higher Education
- Educator Workforce- STEM Teachers
- STEM Jobs vs STEM Literacy

Do other states have a STEM Alliance?

(What we learned)

WHAT TO KEEP AND PROPOSE TO CHANGE

Keep:

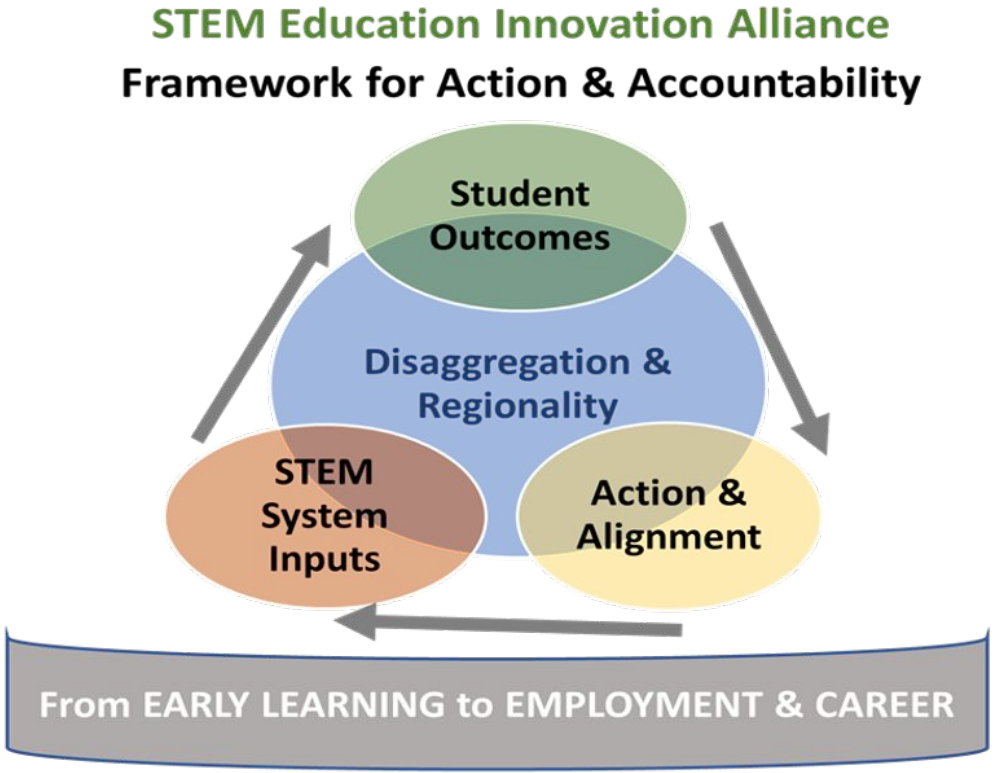
1. General alliance structure
2. Regular meeting cadence (every quarter)
3. Different learning opportunities from external partners (ex. AI experts or Computer Science experts)
4. Staff to manage and coordinate
5. Long term goals
6. Providing policy recommendations

Propose to Change:

1. Framework Modification
2. Membership and Accountability
    - **a. Vehicle/backbone organization**
    - b. Gov. Office, WSAC or Nonprofit
    - **c.** Another agency or organization?
    - **d. Draft Changes to RCW to Strengthen Membership**
    - e. Legislative Accountability
3. Policy Recommendations
    - a. Formal Subcommittee
    - b. Priorities Driven by Alliance or Governor or Lawmakers
    - c. Focused indicators/long term barriers
4. Data
    - a. Identifying the upstream conditions

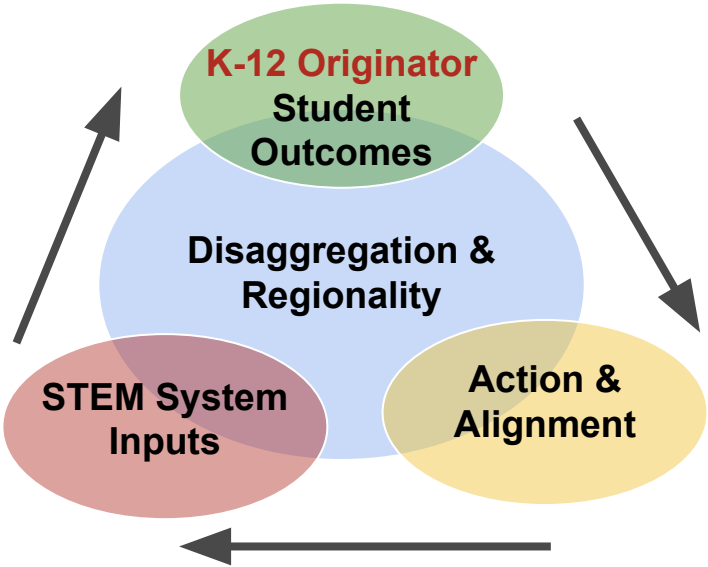
Framework Modification *Recommendation #1*

2022 Updated Framework



2022 Adopted Framework + 2024 Suggested Updates

STEM Education Innovation Alliance
Framework for Action & Accountability



Recommendation #1

From EARLY LEARNING to EMPLOYMENT & CAREER
for K-12 Originating Students

Membership & Accountability

Recommendation #2

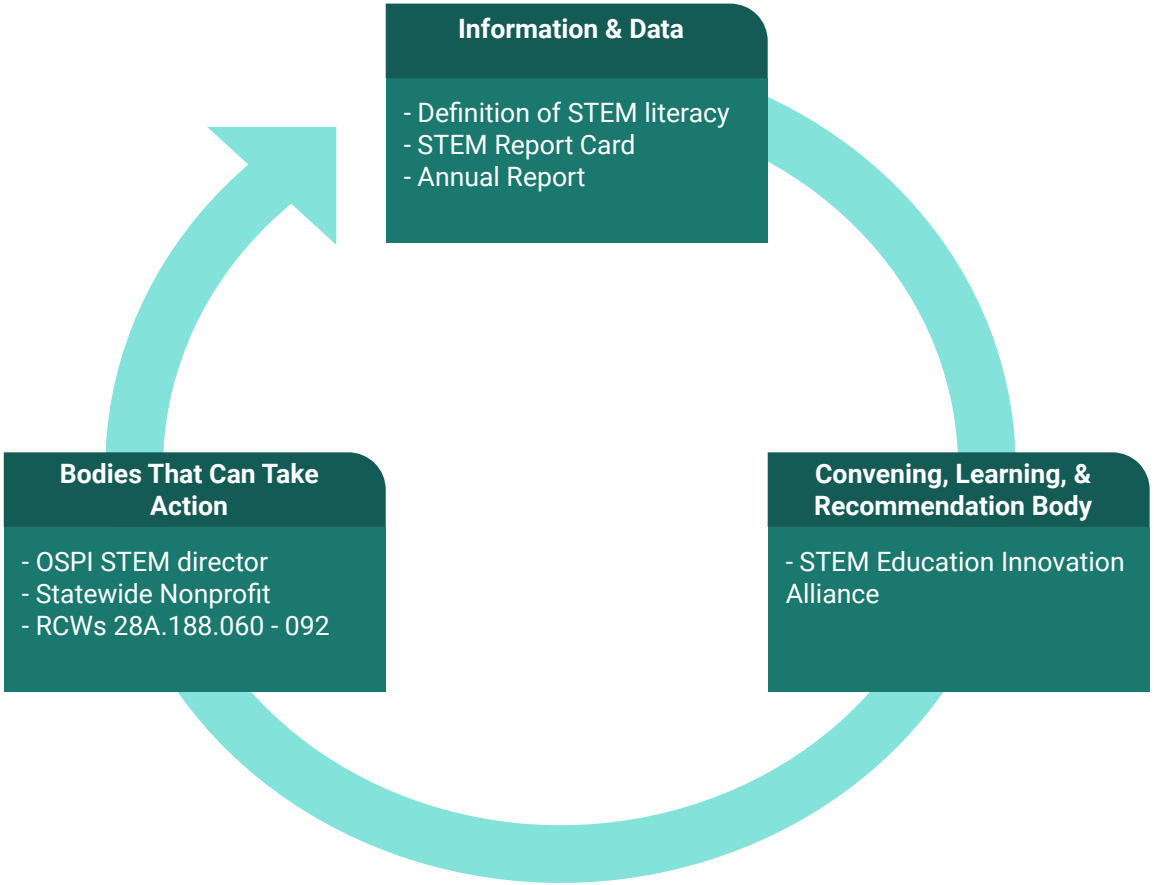
Vehicle/Backbone to the STEM Alliance- Proposed Change 2a

Keep:

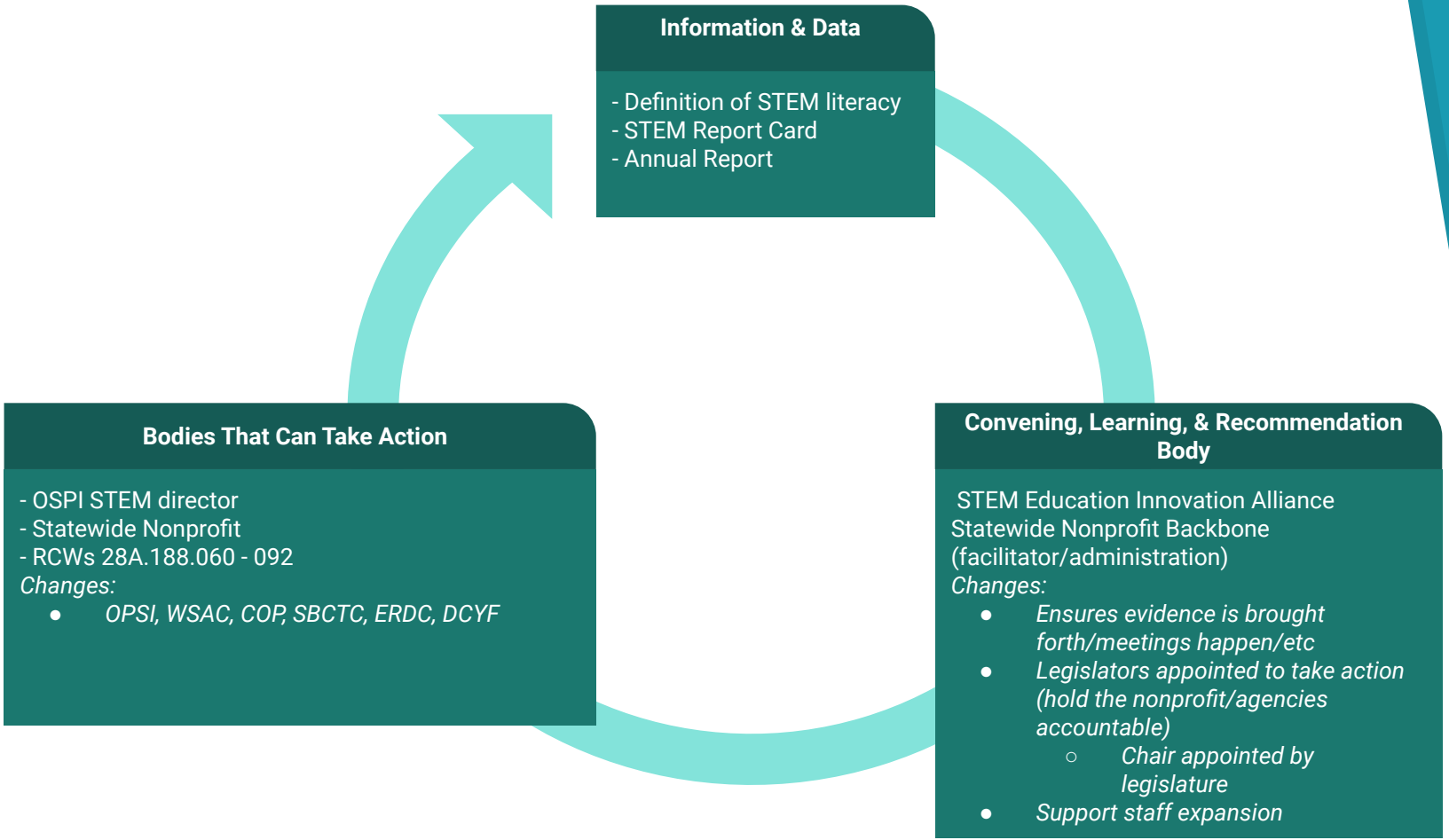
- Priority of the Governor
- Funding to support staff (at an agency)
- Keep statutes and long term goals:
  - Meeting cadence
  - Recommendations
  - Data

Recommended Change:

- Nonprofit or other entity as the administrating backbone
  - Keep coordinating position within an agency (WSAC or OSPI)
- Identified “Chairs” of the Alliance
  - Statewide STEM Director (OSPI)
  - Legislative Education Committees
- Minor Modifications to RCWs
- *Formal legislative priority process*
- *Member charter/agreement*
- *Yearly Work Plan*



STEM Alliance and Related Statutes: Relationship Intent



STEM Alliance and Related Statutes: Relationship Intent

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STEM Alliance and Related Statutes: Proposed change 2d

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Proposed Change:

(1) The STEM education innovation alliance is established to advise the governor and relevant education committees ~~and~~ to provide vision, guidance, assistance, and advice to support the initiatives under this chapter, as well as other current or proposed programs and initiatives across the spectrum of early learning through postsecondary education, that are intended to increase learning opportunities and improve educational outcomes in STEM.

STEM Alliance and Related Statutes: Proposed change 2d

RCW 28A.188.030 - STEM education innovation alliance

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1. to advise the governor…
2. …and to provide vision, guidance, assistance, and advice to support the initiatives under this chapter…
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4. …[and] to develop a STEM education report card.

Proposed Change:

(2) The governor's office, in consultation with a statewide nonprofit, and the superintendent of public instruction, and relevant education committees, shall invite representatives of STEM businesses, business and labor organizations with expertise in STEM fields, one or more nonprofit organizations with a mission to enhance STEM education from early learning through postsecondary education, school districts and institutions of higher education that have demonstrated leadership and innovation in STEM education, and STEM educators to participate in the alliance. Representatives from the governor's office, the office of the superintendent of public instruction, the washington student achievement council, department of children, youth, and families, the education research and data center, and other state education agencies shall also participate as members of the alliance.

Internal Agreements: Proposed Changes

- Membership: Alliance members would review and agree to a 2-year work plan.
  - Meeting topics
  - Emerging topics for policy recommendations
  - Commitments (within own power)
- Formal Subcommittee for legislative recommendations:
  - Provide recommendations by September of each year.
- Asks for Action:
  - Participate in an Action Day in Olympia (in conjunction with an in person Alliance Meeting)
  - Lead a meeting
  - Include in agency budget requests/decision packages
- Potential retreat each year

Month	Action/Phase	Topic
January *Policy Subcommittee* *XX/XX/XX*	Legislative Session	Legislative Session
February *Alliance meeting XX/XX/XX*		Action day
March *Policy Subcommittee* *XX/XX/XX*		
April		
May *Policy Subcommittee* *XX/XX/XX*	Research	
June *Alliance Retreat XX/XX/XX*		
July *Policy Subcommittee* *XX/XX/XX*	Draft Final Recommendations	
August		
September *Policy Subcommittee* *XX/XX/XX*	Share with Agency Partners/OFM	
October	Report Writing	
November *Alliance meeting XX/XX/XX* *(STEM Summit)*	Finalize Report	
December **Policy Subcommittee** **XX/XX/XX**	Report Submitted	

Recommendation #2, Summary

FORMAL/RCW CHANGES:

- Defined agencies and legislator participation to current RCW
- Recommendation that STEM Innovation Alliance stays within the Office of the Governor (TBD)
- Facilitated/administered by nonprofit entity
  - Staff support from agency (TBD)

INTERNAL AGREEMENTS:

- *2-year (or yearly) Alliance Work Plan*
- *Formal Policy Subcommittee*
- *Action activities*

Policy Recommendation Process

Recommendation #3

Policy Recommendation Process (Subcommittee)

January-March/April: Research, discussion, intel from legislators and other partners (during session)

April/May: Refining potential agenda items, including feasibility analysis

June/July/August: Feedback from Alliance members, refinement of recommendations (vote on final language)

September: Recommendations to OFM/Governor

October: Build legislative and partner support, ensure clear roles/responsibilities/capacity of alliance members

November: Build legislative and partner support, ensure clear roles/responsibilities/ capacity of alliance members

December: Build legislative and partner support, ensure clear roles/responsibilities/ capacity of alliance members

ALL Members of STEM Education Innovation Alliance Agree to:

- Inform policy inputs for recommendations
- Come to/vote on consensus on recommendations
- Amplify recommendations to key decision makers and other audiences

Data
Recommendation #4

Summary of Added/Proposed for Replacement STEM Report Card Metrics Proposed (2022)

- STEM coursetaking (including gatekeeping course)
- Dual Credit coursetaking and use
- Student experiences (surveys & qualitative measures)
- WA originators who have gotten jobs in STEM sectors/industries

STUDENT STEM OUTCOMES

- Current & Projected STEM job openings
- K-12 STEM course availability
- Dual Credit course availability

STEM SYSTEM INPUTS

- Disaggregation (K-12 originators, demogs, geography, programs, etc)

DISAGGREGATION & REGIONALITY

- Ensuring complementary reports and resources available in one place

ACTION & ALIGNMENT

Data
Recommendation #4

1. Vision and enabling conditions
    a. Have we reached a consensus regarding the proposed updates to the STEM report card metrics?
    b. Does the current RCW enable or prohibit data collection and reporting agencies from meeting the needs of the alliance?
2. Technical challenges in student education report and metrics
    c. Focuses on the student level outcomes
    d. A lack of disaggregation or regionality data available
    e. Additional analysis needed to match the school district level data v. Workforce Development Area (WDA)
    f. Sustainability + impact of programs initiated under the Chapter 28A.188 RCW (i.e. MESA, Lighthouse programs…) and students' experiences in those programs?
3. Data-driven decision making and vitals support
    g. Have we tried to suggest recommendations based on the above vitals? What should we prioritize? i.e. for inter-sectional data analysis/reporting, ERDC would be more suited to do this work v. WSAC/OSPI.

Next Steps

RECOMMENDATIONS

1. Framework Modification

2. Membership and Accountability
   - **a. Vehicle/backbone organization**
   - b. Gov. Office, WSAC or Nonprofit
   - **c.** Another agency or organization?
   - **d. Draft Changes to RCW to Strengthen Membership**
   - e. Legislative Accountability

3. Policy Recommendations
   - a. Formal Subcommittee
   - b. Priorities Driven by Alliance or Governor or Lawmakers
   - c. Focused indicators/long term barriers

4. Data
   - a. Identifying the upstream conditions

PHASE 3 ACTIVITIES

(June to August 2024)

STEM Education Innovation Alliance Recommendations

Thursday, August 22, 2024

Powered by SurveyMonkey

10

Total Responses

Date Created: Friday, July 26, 2024

Complete Responses: 10

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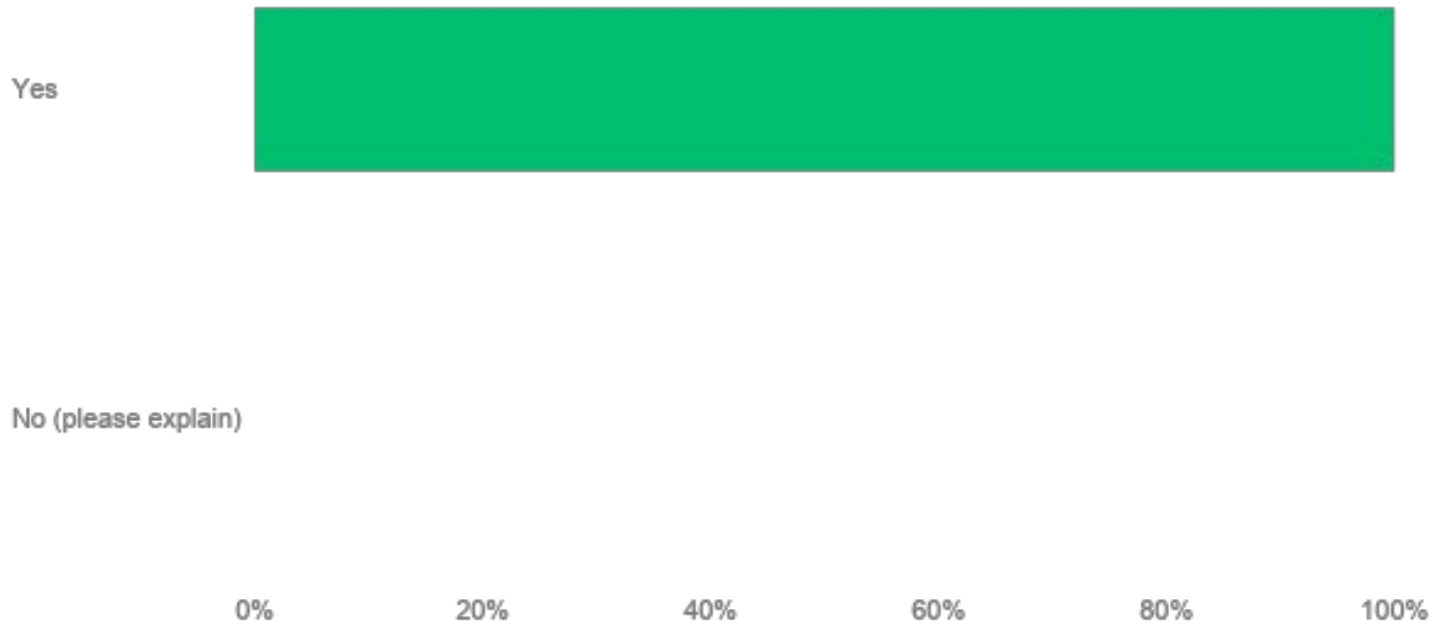
Q1: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2



Powered by SurveyMonkey

Q1: Did we capture your feedback on this recommendation?

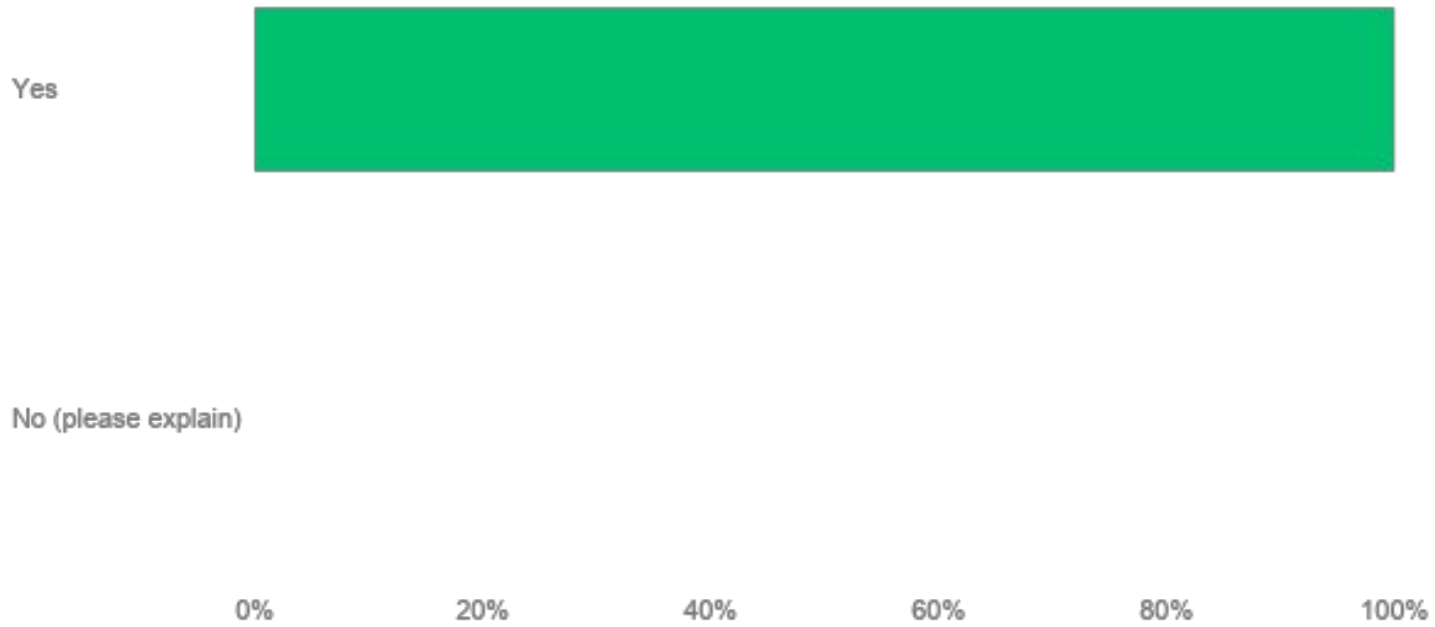
Answered: 8 Skipped: 2

ANSWER CHOICES	RESPONSES	
Yes	100.00%	8
No (please explain)	0.00%	0
TOTAL		8

Powered by SurveyMonkey

Q3: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2



Powered by SurveyMonkey

Q3: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2

ANSWER CHOICES	RESPONSES	
Yes	100.00%	8
No (please explain)	0.00%	0
TOTAL		8

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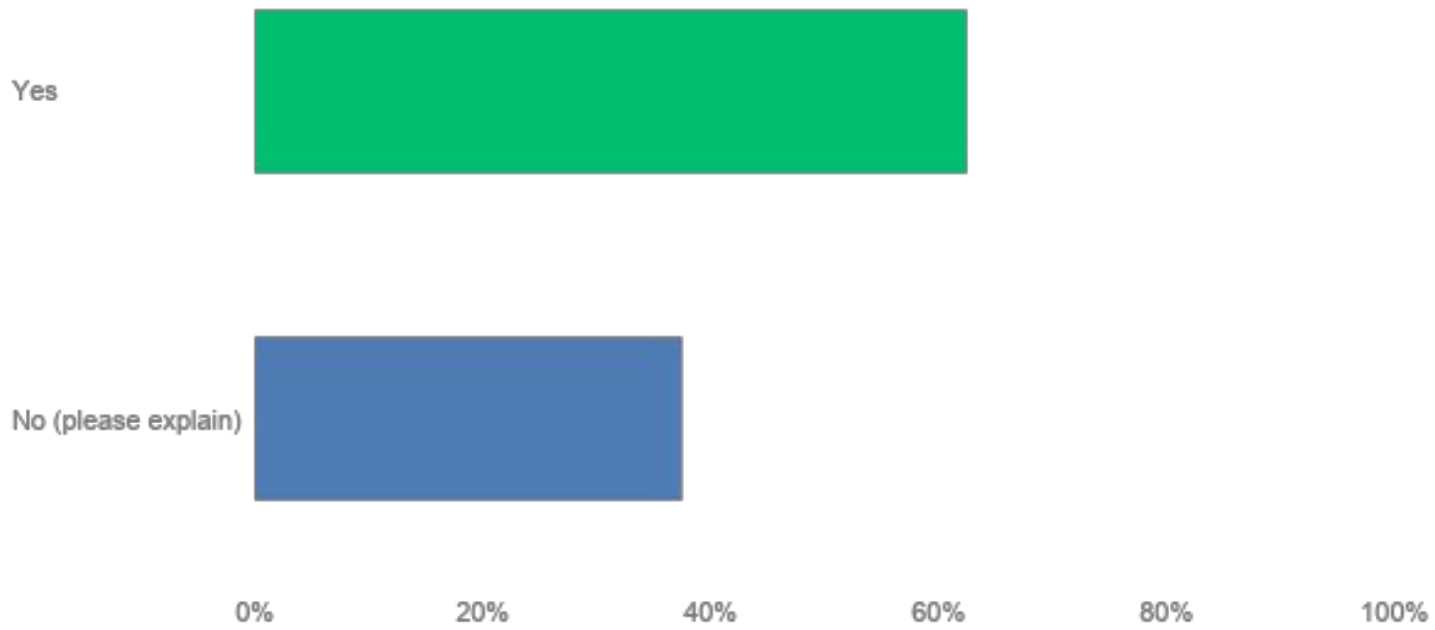
Q5: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2



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Q5: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2

ANSWER CHOICES	RESPONSES	
Yes	62.50%	5
No (please explain)	37.50%	3
TOTAL		8

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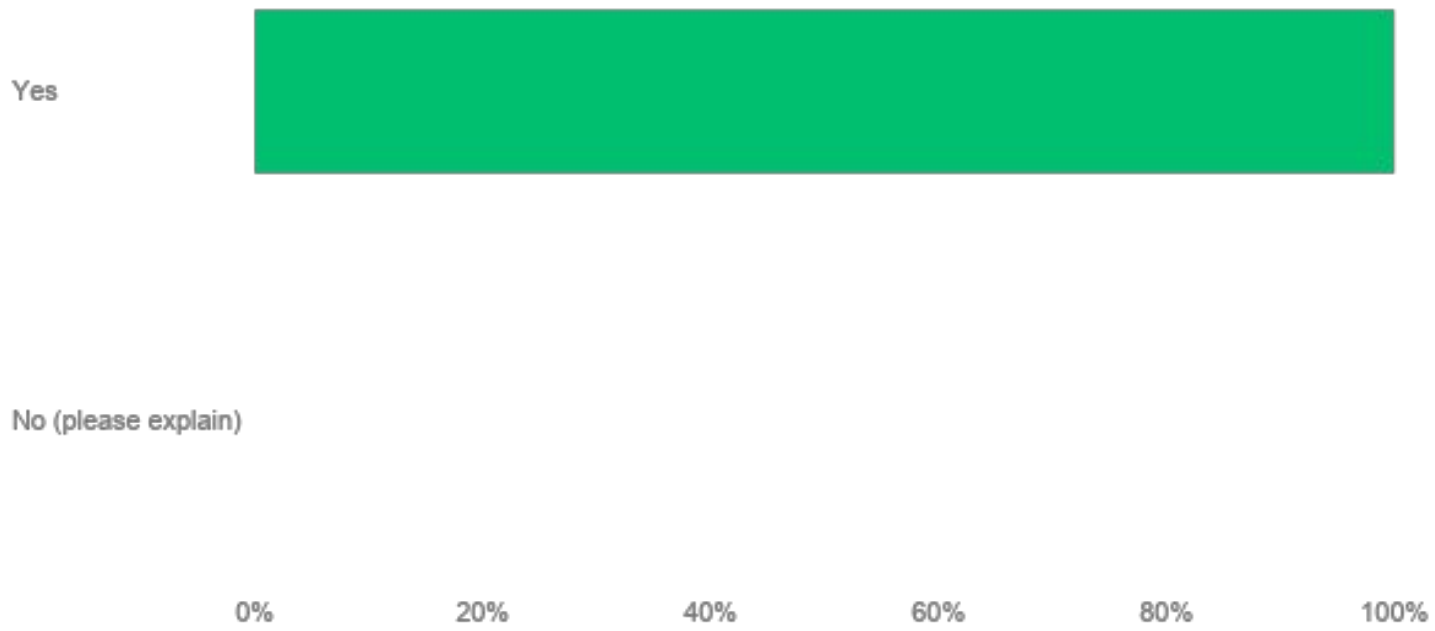
Q7: Did we capture your feedback on this recommendation?

Answered: 7 Skipped: 3



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Q7: Did we capture your feedback on this recommendation?

Answered: 7 Skipped: 3

ANSWER CHOICES	RESPONSES	
Yes	100.00%	7
No (please explain)	0.00%	0
TOTAL		7

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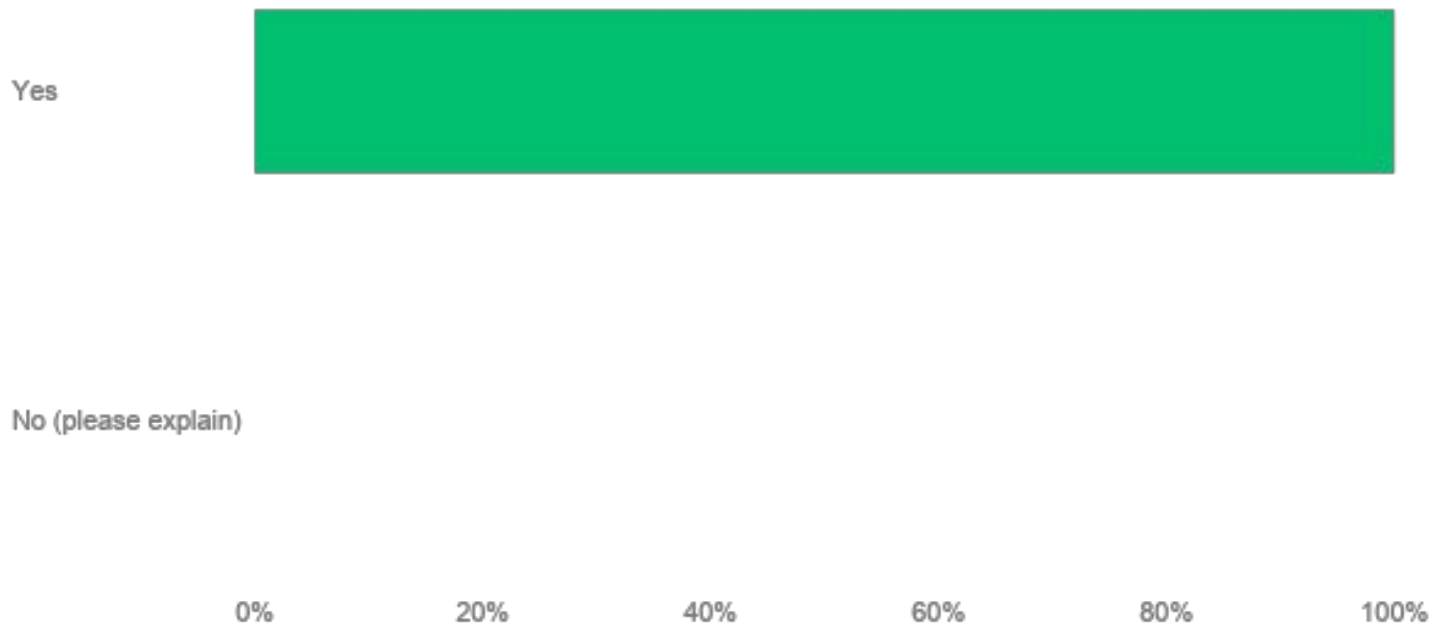
Q9: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2



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Q9: Did we capture your feedback on this recommendation?

Answered: 8 Skipped: 2

ANSWER CHOICES	RESPONSES	
Yes	100.00%	8
No (please explain)	0.00%	0
TOTAL		8

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MODIFICATIONS TO RECOMMENDATIONS

1. Framework Modification
    a. Modify language to “Participants in Washington’s Pre-K-12 Education System”

2. Membership and Accountability
    a. Vehicle/backbone organization
        i. Remains as current structure with stronger roles
    b. No Changes to RCW
    c. Legislative Accountability

3. Policy Recommendations
    a. Formal Subcommittee
        i. Steering/leadership
        ii. Policy
        iii. Metrics
4. Data
    a. Identifying the upstream conditions

NEXT STEPS:

- The Washington Student Achievement Council and the Office of the Governor will convene the STEM Education Innovation Alliance in September.
- The Office of the Governor will include recommendations of the STEM Education Innovation Alliance in the transition book to the Governor-elect.