



R-2 ACADEMIC ACHIEVEMENT - SCIENCE SUMMARY OF PROGRESS STATUS MARCH 2021

SUPERINTENDENT CERTIFICATION

With respect to R-2 Academic Achievement – Science taken as a whole, the superintendent certifies that the proceeding information is accurate and complete, and the district is:

- Making Reasonable Progress
Making Reasonable Progress, with Exception (checked)
Failing to Make Reasonable Progress

Summary Statement by Administration

Monitoring of results policies is part of the ongoing process of district performance evaluation and superintendent evaluation. This report includes a Data Analysis on page 2 presenting an administrative summary of the data and a Capacity Building section on the last page outlining new practice or protocol to be utilized for the next reporting timeframe.

Signed: Jason D. Harbeck Superintendent Date: 3/22/2021

SCHOOL BOARD ACTION

With respect to R-2 Academic Achievement – Science, the Board:

- Accepts the report as making reasonable progress
Accepts the report as making reasonable progress, with exception (checked)
Finds the district failing to make reasonable progress

Summary statement/motion of the Board

Motion by Mr. Lee to accept the R-2.1 Academic Achievement – Science Monitoring Report as Making Reasonable Progress, with Exception, seconded by Mr. Sagsveen. Motion carried.

Signed: [Signature] Board President Date: 3/22/2021

**Data Analysis by Administration**

This section provides readers a summary of the data they are about to review

\*\*There was a significant impact on data and our instructional conversations when we moved to distance learning due to COVID. Specifically, COVID assessment and grading conversations attempted to address how to reliably assess learners, especially younger learners, in virtual environments in ways that depict accurate, individual representations of a student’s knowledge, skills, and understandings while factoring in the home-learning environment and the varied type and amount of supports provided to students from home. As a result, in some instances, teachers were forced to rely upon proficiency check-points or standards-assessment data from earlier in the year. Additionally, an emphasis was put in place to maintain and increase strategies for engaging students during impromptu distance learning through prioritizing attendance, engagement, and homework completion as the desired outcomes over testing and formal assessments.

We believe the evidence supports making reasonable progress as it reflects improvement in the majority of indicators. The state officially adopted new standards in the fall of 2020. During the 19-20 school year work centered around unpacking standards, vertical and curriculum alignment. Current assessment practices around science are varied; this is driving current work around proficiency scales and guaranteed and viable curriculum.

The majority of the data indicates making reasonable progress. We are consistently meeting or exceeding the state average in ACT. Current data indicates less students are taking additional science classes. This is leading conversations around opportunities for students and equitability and accessibility to science electives across buildings.

**R-2.1 Academic Achievement - Science**

**Each student will meet or exceed targeted growth and proficiency using critical and creative thinking.**

**Each Student Will:**

<p><b>2.1</b> Achieve targeted growth and proficiency in the following disciplines:</p> <ul style="list-style-type: none"> <li>ELA</li> <li>Mathematics</li> <li>Science</li> <li>Social Studies</li> </ul>	<p><b>Making Reasonable Progress</b></p>
---	--

**2.1 Science**

**Superintendent Interpretation:**

- **External assessments** include assessments with national norms that are administered within specified windows as a part of state requirements.
- **Proficiency** means meeting or exceeding the knowledge and skill requirements of the specified measure.
- **Grade level target** on the NWEA (MAP) assessment is considered 50th percentile or higher.
- **Proficiency** on the NDSA is considered performing at or above grade level.
- **Proficiency** in the standards means that students have demonstrated that they know, understand and are able to apply knowledge and skills at the “proficient” level of district proficiency scales.
- **Proficiency** is defined as “College Ready” on the ACT Aspire and ACT which is based upon the following percentiles and ACT cut scores. This score is an indication of the extent to which they are prepared for college-level work. The ACT consists of curriculum-based tests of educational development in English, mathematics, reading, and science designed to measure the skills needed for success in first-year college coursework.
- **Cut Score** is the minimum score needed on the ACT per subject-area to indicate a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in the corresponding credit-bearing college courses.

Minimum Expected Percentile				
	English	Math	Science	Reading
Aspire Grade 9	44	74	79	71
Aspire Grade 10	47	84	75	75
ACT	42	63	70	60
Minimum ACT Cut Score				
ACT	18	22	23	22

- **Targeted growth** is the expected growth defined by national norms on a particular assessment. National data indicates that 50% of students typically meet their expected targeted growth.

- **Minimum requirements** include BPS graduation expectations for high school and core courses in K-12.
- **Critical and creative thinking** refers to the success skills which include critical thinking, creativity, collaboration and communication. Done well, students will collect, assess and analyze relevant information, reason effectively, reflect critically on learning experiences, use a wide range of idea creation techniques to create new and worthwhile ideas, work collaboratively in teams for sustained periods of time to develop high quality products, and communicate ideas through the creation of authentic products using a combination of words, data, and visual representations to inform, persuade and entertain others.
- **Routine application** means evidence (e.g. elect/classroom observation data, survey data, Danielson, ND DPI student engagement survey (ESSA), Advanced Ed survey data) indicates that critical and creative thinking is a clearly understood and regular part of the classroom environment.

Green	Met or Increased
Blue	Flat or a Decrease Under 2%
Yellow	Decreased 2% to 4.9%
Red	5% or More Decrease

<b>Indicator 1:</b> Students will show continuous improvement toward, or attainment of a target so that at least 80% of all students are considered proficient in each grade level assessed on the NDSA in the area of science.	<b>Making Reasonable Progress</b>
---	-----------------------------------

**Evidence:**

Grade	Target	Fall 15-16	Fall 16-17	Fall 17-18	Fall 18-19	n	Spring 19-20
4	80%	64%	62%	65%	64%	No data due to COVID	
8	80%	64%	64%	61%	63%		
11	80%	64%	65%	61%	61%		

<b>Indicator 2:</b> Students will show continuous improvement toward, or attainment of a target so that at least 80% of students are considered proficient in each grade level assessed on the ACT Aspire in the area of science.	<b>Making Reasonable Progress</b>
---	-----------------------------------

**Evidence:**

Grade	Target	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19	n	Spring 19-20* Fall of 2020
9	80%	911	40.5%	909	45.7%	925	44.2%	No data due to COVID	
10	80%	855	45.3%	874	45.2%	882	46.6%		

<b>Indicator 3:</b> The district mean scores will match or exceed the state mean score on the ACT in the area of science.	<b>Making Reasonable Progress</b>
---	-----------------------------------

**Evidence:**

Year	Number of Students Tested		Science	
	District	State	District	State
2016	849	7379	20.9	20.7
2017	834	7399	20.8	20.6
2018	827	7282	20.7	20.5
2019	845	7451	20.7	20.2
2020	871	7418	20.5	20.1

<b>Indicator 4:</b> Each student will show continuous improvement toward, or attainment of a target so that at least 80% of students are proficient in grade level science standards.	<b>Making Reasonable Progress</b>
---	-----------------------------------

**Evidence:**

Proficiency = 3.0

Grade	Target	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19	n	Spring 19-20
K	80%	650	69.5%	668	68.9%	918	79.7%	974	70.5%
1	80%	600	85.2%	636	80.8%	991	86.8%	964	82.5%
2	80%	764	67.7%	714	79.1%	929	79.0%	954	94.2%
3	80%	845	62.7%	776	62.9%	911	52.8%	951	51.8%
4	80%	1034	58.1%	1077	61.6%	1002	60.6%	955	60.5%
5	80%	1031	35.0%	1037	36.2%	1031	41.0%	1011	38.3%
6	80%	984	38.7%	1040	26.3%	1062	34.4%	1112	38.7%
7	80%	973	23.9%	997	20.7%	1058	42.2%	1089	44.4%
8	80%	953	20.1%	965	22.4%	1003	29.4%	1082	30.8%

Proficiency = 2.75 Target

Grade	Target	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19	n	Spring 19-20
K	80%	650	77.7%	666	77.0%	918	85.7%	974	79.7%
1	80%	600	91.5%	634	88.6%	990	89.8%	964	86.2%
2	80%	762	84.0%	713	92.6%	929	89.3%	954	95.4%
3	80%	845	79.4%	776	79.3%	911	68.6%	951	66.8%
4	80%	1033	72.7%	1072	77.2%	1002	78.2%	955	75.8%
5	80%	1030	59.1%	1036	62.9%	1031	68.8%	1011	60.6%
6	80%	980	55.8%	1040	40.9%	1061	46.9%	1112	49.4%
7	80%	972	44.2%	994	42.1%	1057	55.6%	1089	60.6%
8	80%	950	37.6%	965	41.5%	1001	47.3%	1082	56.6%

Proficiency = 2.50 Target

Grade	Target	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19	n	Spring 19-20
K	80%	650	84.9%	666	81.2%	918	88.2%	974	85.7%
1	80%	600	95.5%	634	95.7%	990	95.2%	964	91.2%
2	80%	762	71.1%	713	97.2%	929	96.4%	954	98.0%
3	80%	845	89.8%	776	90.6%	911	84.4%	951	85.3%
4	80%	1033	84.2%	1072	87.2%	1002	87.9%	955	88.3%
5	80%	1030	82.0%	1036	81.3%	1031	83.5%	1011	79.2%
6	80%	980	72.8%	1040	62.5%	1061	63.9%	1112	66.5%
7	80%	972	66.3%	994	65.6%	1057	70.1%	1089	75.9%
8	80%	950	62.3%	965	61.0%	1001	64.6%	1082	71.5%

<b>Indicator 5:</b> At least 40% of all students are participating in courses that promote college and career readiness specific to science beyond minimum requirements.	<b>Failing to Make Reasonable Progress</b>
--	--

**Evidence:**

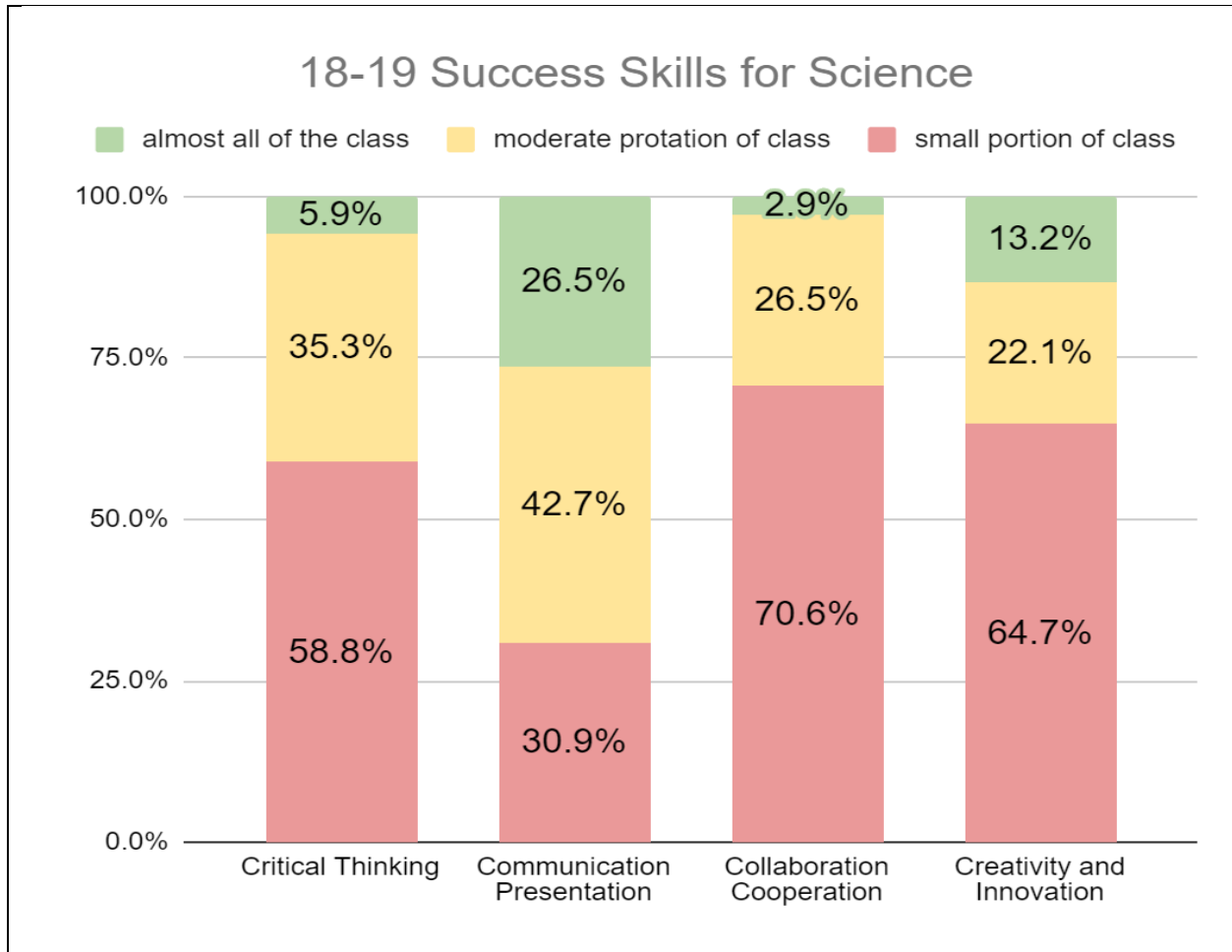
Grade	Target	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19	n	Spring 19-20
12	40%	854	46.0%	858	42.1%	884	41.4%	919	34.1%

<b>Indicator 6:</b> Students will report and show continuous improvement toward, or attainment of, a target so that at least 80% of students are routinely applying critical and creative thinking in Science.	<b>A new baseline will be developed for the 2021-2022 school year</b>
--	---

**Evidence:** For 2021 and beyond, a team of teacher leaders and district staff are currently engaged in a process of creating our district portrait of a graduate and will create student and staff survey questions that will be used to gauge progress on student learning behaviors that illustrate the use of creativity, critical thinking and other success skills as it relates to relevant learning. This data will replace the Student Inventory survey and ELEOT data moving forward.

**2018-2019 Evidence:** *Eleot (The Effective Learning Environments Observation Tool) is a learner-centric observation tool that measures and quantifies student learning behaviors. In the chart below, Red (small portion of class) indicates that less than 50% of students observed during those particular observations were observed applying the item and that the quality of application was routine and of moderate to high complexity. Yellow (moderate portion of class) indicates that between 50% - 79% of students were observed applying the item and that the quality of application was routine and of moderate to high complexity. Green (almost all of the class) indicates that between 80% -100% of students were observed applying the item and that the quality of application was routine and of moderate to high complexity.*

*Overall, across observations of students engaged in Science, 5.9% of the classroom observations illustrated that at least 80% of the students were observed to be applying critical thinking. Additionally, 13.2% of the observations found that at least 80% of students were observed to be applying creative thinking. The total number of observations in Science = 6.*



### Capacity Building

This section provides new inputs by administration placed into practice or protocol since this data was collected.

#### Input by Administration

##### Curriculum (K- 5)

- Year 2 of Science Curriculum Review Team operation representing 100% of buildings and all grade levels
- K-5 Science Standard Alignment Work
- Development of proficiency scales for K-5 Science Standards
- Curriculum Team pilot of science hands-on resources that support our primary resource and target more of our state standards than existing resources

##### Curriculum- (6-12)

- 6-12 Science Core Guiding Teams established representing teachers in all buildings
- Disciplinary Literacy (what does it look like to read, write, speak like a scientist) and alignment to standards
- 6-12 Pacing Guides complete for Core Science courses
- High School district teams creating online learning modules/labs

##### Professional Development Opportunities

- Proficiency Scales training (K-5)
- New Teacher Orientation - Science Resource Presentation (K-5)
- Culturally Responsive Teaching and the Brain book studies
- Inquiry Based Science Coaching
- Exploration of varied instructional approaches in response to online teaching formats

##### Other Highlights

- Science teachers at the secondary level have begun exploring current science curriculum in relation to culturally responsive teaching practices based on student data reviews.
- Grant-funded .5 middle school literacy coach started January '21 and working with some science teachers around disciplinary literacy, inquiry, and thinking strategies.

#### Suggested Changes by Administration

##### 2.1 Science

##### Superintendent Interpretation:

**Routine application** means evidence ~~(e.g. ELEOT/classroom observation data, survey data, Danielson, ND DPI student engagement survey (ESSA), Advanced Ed survey data)~~ indicates from classroom observation, curricular and student work artifacts, and/or survey data indicate that critical and creative thinking is a clearly understood and regular part of the classroom environment.

##### Superintendent Indicator of Compliance:

<p><b>Indicator 11:</b> Students will report and show continuous improvement toward, or attainment of, a target so that at least 80% of students are routinely applying critical and creative thinking <del>in Science</del>.</p>	
---	--



Rationale: The changes to the superintendent interpretation section includes language that is not specific to programs or companies. The identification of specific programs or companies creates conditions for frequent changes within Coherent Governance policy. The new language captures the exact same intent and provides for longitudinal data for the district, board and community.