BISMARCK PUBLIC SCHOOLS
College, career, community ready

Bismarck Public School District
Results Monitoring Report

R-2 ACADEMIC ACHIEVEMENT - SCIENCE
SUMMARY OF PROGRESS STATUS
MARCH 2020

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:

__X__ Making Reasonable Progress
_____ Making Reasonable Progress, with Exception
_____ 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 addresses six indicators of the superintendent's responsibility regarding Academic Achievement – Science. Five of the indicators demonstrated reasonable progress and one indicator was a baseline measurement.

Signed: _____ Date: 3/23/2020
Superintendent

SCHOOL BOARD ACTION

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

__X__ Accepts the report as making reasonable progress
_____ Accepts the report as making reasonable progress, with exception
_____ Finds the district failing to make reasonable progress

Summary statement/motion of the Board

Motion by Mr. Lembke to accept the R-2.1 *Academic Achievement - Science* Monitoring Report as Making Reasonable Progress, seconded by Ms. Delorme. Motion carried.

Signed: _____ Date: 3/23/2020
Board President

Data Analysis by Administration

We believe the evidence supports making reasonable progress as it reflects improvement in the majority of indicators. Although the state is officially adopting new standards in the fall of 2020, we are digging in and having conversations about vertical alignment, rigor, and proficiency scales this year. This work will be foundational in moving forward.

R-2.1 Academic Achievement - Science

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

Each Student Will:

2.1 Achieve targeted growth and proficiency in the following disciplines: ELA Mathematics Science Social Studies	**Making Reasonable Progress**

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. eleot/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

Indicator 1: 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.	**Making Reasonable Progress**

Evidence:

Grade	Target	Fall 15-16	Fall 16-17	Fall 17-18	Fall 18-19
4	80%	64%	62%	65%	64%
8	80%	64%	64%	61%	63%
11	80%	64%	65%	61%	61%

Indicator 2: 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.	**Making Reasonable Progress**

Evidence:

Grade	Target	n	Fall 15-16	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19
9	80%	892	32.5%	911	40.5%	909	45.7%	925	44.2%
10	80%	<10	NA	855	45.3%	874	45.2%	882	46.6%

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

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

Indicator 4: 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.	**Making Reasonable Progress**

Evidence:

Grade	Target	n	Spring 15-16	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19
K	80%	522	77.2%	650	69.5%	668	68.9%	918	79.7%
1	80%	617	89.0%	600	85.2%	636	80.8%	991	86.8%
2	80%	684	71.3%	764	67.7%	714	79.1%	929	79.0%
3	80%	733	54.2%	845	62.7%	776	62.9%	911	52.8%
4	80%	994	57.6%	1034	58.1%	1077	61.6%	1002	60.6%
5	80%	891	48.1%	1031	35.0%	1037	36.2%	1031	41.0%
6	80%	929	42.0%	984	38.7%	1040	26.3%	1062	34.4%
7	80%	928	24.7%	973	23.9%	997	20.7%	1058	42.2%
8	80%	908	17.3%	953	20.1%	965	22.4%	1003	29.4%

Indicator 5: At least 40% of all students are participating in courses that promote college and career readiness specific to science beyond minimum requirements.	**Making Reasonable Progress**

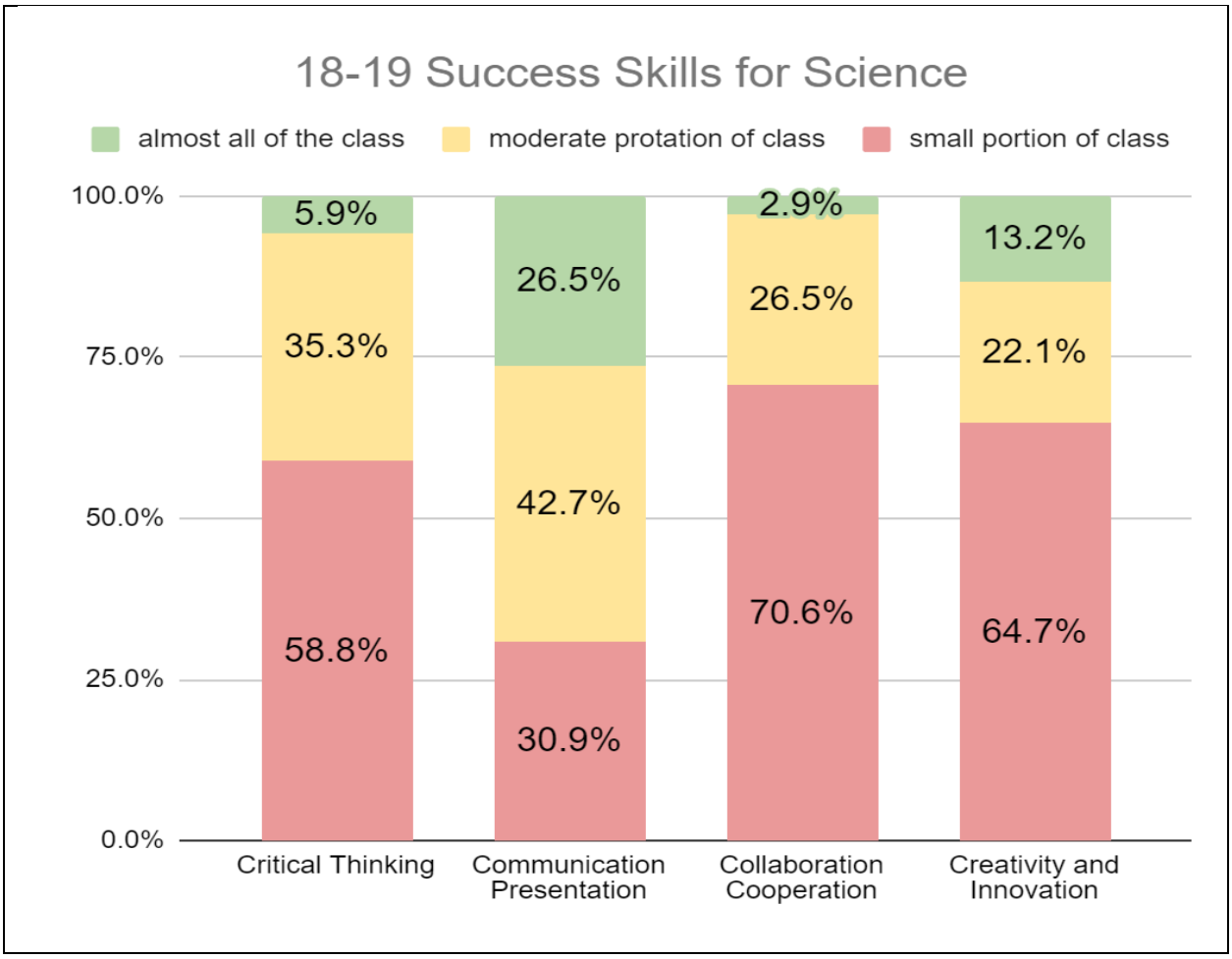
Evidence:

Grade	Target	n	Spring 15-16	n	Spring 16-17	n	Spring 17-18	n	Spring 18-19
12	40%	87	31.2%	854	39.8%	858	36.0%	884	35.5%

Indicator 6: 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.	**Baseline will be for the 2018-2019 school year**

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 = 68.


18-19 Success Skills for Science
almost all of the class
moderate protation of class
small portion of class
100.0%
75.0%
50.0%
25.0%
0.0%
5.9%
35.3%
58.8%
26.5%
42.7%
30.9%
2.9%
26.5%
70.6%
13.2%
22.1%
64.7%
Critical Thinking
Communication Presentation
Collaboration Cooperation
Creativity and Innovation

Capacity Building

Input by Administration

A couple notable recent inputs into the area of Science include but are not limited to:

The formation of a K-5 curriculum review team engaging in a review of standards, proficiency scales, and resources. The results of this review will help identify gaps in curriculum development as well as training needs to build the capacity of district leadership, teachers, and instructional coaches and chart next steps. The K-5 curriculum review team is working on creating an easy to access document that explains resources and how these resources tie to grade level standards.

K-5 teachers have had the opportunity to attend a resource exploration training session where they have been able to better understand their standards and cross-walk with the primary digital resource as well as hands-on kits available for instruction.

Middle school STEM teachers have been working on the creation of a shared website that includes modules. These modules allow for more student voice and choice in their learning paths.

In order to increase critical thinking and discourse in science courses, five middle school and four high school teachers are attending a Science Inquiry Institute. They will be bringing that learning back to the larger district science team as they continue to examine their own standards and scaffolding of skills required for science proficiency.

Middle and high school science teachers have begun to align their standards across courses 6-12 in order to identify gaps and overlaps in curriculum. They will engage in a full curriculum audit beginning in the 2020-2021 school year.

Addition of regular scheduled vertical science portfolio holder meetings K-5, 6-8, and 9-12 to share goals, progress, align, and plan upcoming professional development and curriculum review teams and sessions.

We believe these are critical components to the future of meeting our desired results in science.