

# Data Informed: An Introduction to GEMS

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## INTRODUCTORY COURSE

*This introduction to the establishment and navigation of Montana's education data warehouse is intended to provide the background knowledge surrounding Montana's collected education data for effective and efficient access by school leaders and educators.*

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*A stakeholder's introduction to the  
Montana Statewide Longitudinal Data  
System*

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[gems.opi.mt.gov](https://gems.opi.mt.gov)

This introduction to the establishment and navigation of Montana's education data warehouse ultimately sets the foundations for data use practices for informed school decision making. Whether intimidated by data or intimately involved with data in decision making, this introduction is intended to provide the background knowledge surrounding Montana's collected education data for effective and efficient access by school leaders and educators. The updated GEMS website launched in February of 2021, therefore stakeholders familiar with the previous version of GEMS will find this course helpful in understanding the updates and changes to the new platform. In addition, stakeholders new to navigation and use of GEMS will utilize this course as a beginner's guide.

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A project by the Montana Office of Public Instruction's (OPI) Statewide Longitudinal Data System (SLDS) team. The Montana SLDS, or GEMS (Growth and Enhancement of Montana Students) provides access to data collected from Montana's educational community to help inform the OPI, schools, educators, and the community about the success of Montana's schools.

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Visit [gems.opi.mt.gov](https://gems.opi.mt.gov) to learn more.

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This downloadable packet is based on the OPI Hub course, *Data Informed: An Introduction to GEMS*. To engage with these materials in the interactive course, visit The Learning Hub from the OPI website to register.

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This project is made possible through the collaboration and support of our federal Statewide Longitudinal Data System partners and grant funding.





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## GEMS Overview

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A brief glimpse at what GEMS is and the development of GEMS over the years.

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## *What is GEMS?*

We know that Montana's students continue to excel, while other trends of inequity around achievement persist for many students across the state. We don't exactly know how this happens and what schools can do to make success accessible for all Montana students. What we do know is that meaningful, reliable and valid data serve as a vital tool for informed continuous growth efforts. That is the reason why the Growth and Enhancement of Montana Students (GEMS) was created. GEMS is at the heart of our efforts to create a data use culture in Montana. By accessing the resources of GEMS you are a part of this culture. This packet material serves as an introduction to the background and purpose for the Montana SLDS (GEMS), and provides you the tutorials and resources for using the data stored in GEMS.

By integrating data use practices into the culture and process of school decision making, this packet provides the background knowledge needed to understand the integral role data plays in the education arena, establishes basic data literacy and skills, and makes connections for how the right data can inform decisions and practice for a district, school, classroom, or particular student. Whether a school team is intimidated by data or intimately involved with data in their decision making, this introduction is intended to guide toward data ownership and creative thinking for stakeholders and practitioners through the GEMS platform.

GEMS is Montana's Statewide Longitudinal Data System (SLDS). It is the Montana K12 education data warehouse and stands for the Growth and Enhancement of Montana Students. GEMS provides access to multiple years of longitudinal data in order to track school and student information across time, it removes barriers for decision-makers to obtain data in a usable form, and it stores all data collected by the OPI to provide an effective, timely, and efficient approach to analyze student and school performance.

Watch the [GEMS introduction video](#).

# *Brief History*

The Montana Office of Public Instruction (OPI) has received four grants from the US Department of Education for purposes of developing this data warehouse and its associated web platform.

## **FY 2009 SLDS Grant**

The first grant created the infrastructure for launching GEMS and consolidating resources at the OPI. Through the FY09 grant, funding was provided for the development of a K12 data warehouse, enterprise-wide data architecture, and K12 data governance. The grant project focused on migrating data from numerous legacy systems and implementing business intelligence tools through GEMS.

## **FY 2012 SLDS Grant**

The second grant focused on extending K20 linkages with the Office of the Commissioner of Higher Education (OCHE), and had a special focus on K-20 data analysis and our Electronic Transcripts initiative. Through the FY12 SLDS grant, GEMS was expanded by linking the K12 longitudinal data with the Montana University System's postsecondary data warehouse. A K20 Data Governance team was created and steered the project forward. The Montana e-Transcript Initiative was part of the OPI's K20 Data Project and linked data between K12 and postsecondary education partners. In addition, GEMS launched a "College Readiness" domain that included high school follow-up reports.

## **FY 2015 SLDS Grant**

The third grant focused on data use. The FY15 SLDS grant was utilized for the purpose of developing a data-use culture within the state's education systems through direct partnerships with university researchers, by increasing teachers' use of data to enhance teaching, and to evaluate the effectiveness of state programs. A new GEMS website was designed and released through this grant's funding.

## **FY 2019 SLDS Grant**

The current grant focuses on updating the GEMS warehouse, such as updating to the Common Education Data Standards (CEDS) structure, for ease of use and transferability to other states. The FY19 SLDS grant was also supplemented through grant funds in August of 2020 to help with the impact of COVID-19. These funds are being used to support responsiveness to stakeholder needs and to minimize delays and disruptions to the project.



# MONTANA SLDS HISTORY

## The Path to GEMS Today

STATEWIDE  
STUDENT  
INFORMATION  
SYSTEM: AIM



2005

Montana legislature passed Senate Bill 152 and appropriated funding to create a statewide student information system: Achievement in Montana (AIM). Each student was assigned a unique statewide student identifier (SSID) included as part of their permanent record.

STATEWIDE  
LONGITUDINAL  
DATA SYSTEM:  
GEMS



2009

Using AIM as the foundation, Montana used its first SLDS grant to create a K12 data warehouse and affiliated data governance practices. The Growth and Enhancement of Montana's Students (GEMS) was launched to provide access to longitudinal school and student information.

PATHWAY TO  
EXCELLENCE



2011

Montana legislature established Pathway to Excellence to promote education excellence through data-driven decision making. A school profile was created for each school to display educational data including achievement, enrollment, demographic, graduation and location information.

DATA  
LINKAGES FOR  
STUDENT  
SUCCESS



2012

The second SLDS grant sought to establish data linkages between K12 and postsecondary Montana University System partners and crafted an electronic transcript system. A K20 Interagency Data Governance Council paralleled the data linkage. By 2013, GEMS users could access data informing college readiness of its students.

CELEBRATING  
SUSTAINABILITY



2015

Throughout the development of GEMS history, great effort was invested to creating stable, sustainable support for the SLDS, as well as governance structures. In 2015, the Montana SLDS achieved state funding from the Montana state legislature.

Timeline continued on next page...



# MONTANA SLDS HISTORY

## The Path to GEMS Today

Timeline continued ...

### FOSTERING A DATA CULTURE



2015

The third SLDS grant fostered a data-use culture in Montana. Through GEMS, customizable reports were made available to users. Long-term partnerships with university researchers and faculty were developed making GEMS integral to understanding and preparing Montana's teachers. The Early Warning System (EWS), E-transcript system, and FAFSA reports functioned as meaningful elements of establishing data use with stakeholders.

### INNOVATION THROUGH INFRASTRUCTURE



2019

The fourth SLDS grant focuses on developing GEMS' infrastructure by updating the data warehouse technology, establishing data linkages with Montana's workforce and tribal colleges, and implementing robust sustainability efforts.

### COVID SUPPLEMENTAL GRANT



2020

Montana received supplemental funding for its FY 2019 SLDS grant to better understand and temper COVID's impact on Montana's SLDS and data use. These supplemental funds expand the scope of the project to enhance the data warehouse rebuild project and expand the tribal college collaborative research projects.

### NCER GRANT



2020

In 2020, the National Center for Education Research released a competition that targets research use of the SLDS. In the first year, FY2022, the SLDS and Montana State University will analyze key research questions associated with school and student growth.

### NEW GEMS WEBSITE PLATFORM



2021

One major product output of the FY 2015 SLDS grant developed a new GEMS website to improve ease of navigation and use. The new GEMS platform launched at the end of 2020: [gems.opi.mt.gov](http://gems.opi.mt.gov)

## *GEMS Today*

Currently, users of GEMS can access data about issues from student success on standardized tests to measures of college readiness. Users can amass data for specific schools, districts, counties, and statewide on a variety of these outcomes. These data are displayed in different formats including charts and tables and can be exported to external software packages.

Examples of user research questions include:

- Do schools with higher average ACT scores have fewer students that enroll in remedial classes over time?
- Do students from schools that have a higher American Indian population have lower assessment scores than schools with a lower American Indian population?
- Do schools that have converted to a 4-day schedule have different student outcomes than schools that use a traditional five day school week?

Using the data in this way, users are able to make recommendations to schools about how to improve instruction and change policies to increase student success. These and many other research questions can be answered with an analysis of the data included in GEMS.





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## GEMS Navigation

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This section provides a guided walkthrough of navigating the GEMS website, as well as more specific tutorials of working with the data stored in GEMS.

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# What's New About GEMS?

The new GEMS website platform launched in February of 2021 through the FY 2015 SLDS grant funds. The overarching goal of redesigning the website was to provide ease of navigation and use to our GEMS users. In this way, several focus areas developed with the intention of increasing stakeholder and educator data use to enhance learning based on data-driven decision making.

- One focus area was to increase access to interactivity for GEMS users. As you explore the new GEMS website, you will find that interactive data dashboards are the primary platform utilized to provide data. All of the data that was on the previous version of GEMS can still be found on the new version, however much of the data once stored in SSRS reports is now made available in a dashboard environment.
- Another focus area was to decrease the time and "number of clicks" it takes to arrive at the data you are searching for. The previous format and layout of GEMS required a minimum of 3 clicks in order to navigate to a data destination. In comparison, the updated GEMS layout gets you to your desired data report or dashboard in 2 clicks. One way in which this goal has been accomplished was by simplifying the data domains. The previous version of GEMS used 9 data domains, where the new version of GEMS relies on just 3 domains providing simplified navigation.
- There also have been several new dashboards added to the website giving you view to data not available on the previous version of GEMS. Overall, the user of GEMS now spends less time searching for the data, AND there is more data made available- it is a win-win.

For previous users of GEMS who are familiar with the original layout, it might be most helpful to begin by comparing and contrasting navigation of the old to new version. The next few pages provide some content and resources that help explain major changes between the versions. For new users of GEMS, you will find that this same content and provided resources give you an overview of how to access and navigate the GEMS website.

To begin, visit the GEMS website at [gems.opi.mt.gov](https://gems.opi.mt.gov)





# OLD GEMS VS. NEW GEMS

The new GEMS website launched February of 2021 providing Montana's A education data users with simplified navigation and more interactive A options. This infographic compares and contrasts GEMS 1.0 and GEMS 2.0.



## Providing Ease of Use

The new design simplifies the data A searching process so stakeholders A and users of GEMS can spend A more time in the data and less A time searching for it.

## Consistent PURPOSE & GOAL



The overarching goal of GEMSA has not changed in the A transition from the old website A to the new: GEMS provides A access to data collected from A Montana's educational A community to help inform the A OPI, schools, educators, and the A community about the success A of Montana's schools. A

## MORE INTERACTIVE DASHBOARDS

There are approximately 20 new A dashboards, and a tutorial guide A is provided for each one, giving A you more search customization.



## REQUEST SECURE GEMS ACCESS ON THE WEBSITE

## STUDENT SECURITY IS STILL PRIORITY

Both old GEMS and new GEMS offer a public A facing site and GEMS to protect student-level A data. While the previous version of GEMS had a A separate Secure GEMS website, the new version A simply has you login to the public facing site. A Your old login should work, though you may A need to reset your password.

The previous version of GEMS utilized 9 data domains including: General School & District Information, Program & A Course Offerings, Student Achievement, School Nutrition & A Pupil Transportation, School Finance, School Staffing, A Student Characteristics, Student Engagement, and College A Readiness. In comparison, the new version of GEMS has simplified to 3 data domains: student data, school/district A data, and finance data. This not only simplifies how data is A organized in GEMS, but it also reduces the search A complexity for users- simply put, less clicking and more data.... it's a win-win!

## DIFFERENCE IN DOMAINS

## USING GEMS

The previous version of GEMSA provided a dropdown on the A home page that offered data A definitions, the user manual, and A training documents. Each of these A resources are now built into the A dashboards on the new version of A GEMS providing you relevant A resources right when and where A you need it.

GEMS is not a static site! Tell us what could be better...

## ALWAYS SEEKING USER FEEDBACK



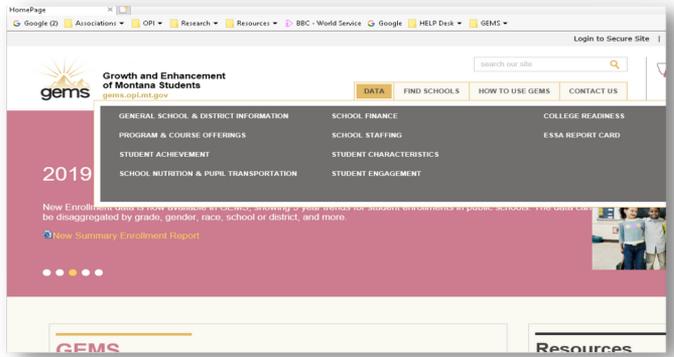
... or what else you would like to see added in!

# Navigating the New GEMS Website

## GEMS Homepage:

- The look and feel of the homepage has changed.
- Instead of a complex dropdown schema with nine domains, new GEMS has simplified to show the three domains (student, school/district, and school finance) and related links. Everything is a manageable 2 clicks away from the data. It used to be the data would only be available with 3 + clicks. Among these related links are direct links for the GEMS Help Desk and to make data request.

Pervious version of GEMS homepage and the complex dropdown schema for access to nine data domains.



## Direct Access to Domains:

- Before you had to find the domain in the menu, click on it, go to the landing page of domain, then select from the 'Hamburger' Menu which report to go to.
- Now you have a visually orientated view instead of a menu, one click to choose the domain, and one click to choose dashboard/report.

## Reports to Dashboards:

- Many of the reports from the previous version of GEMS we have changed to dashboards. Old GEMS had about 10 dashboards. New GEMS has 25+. Many dashboards are Map driven providing a visual reference.
- Instead of having different blue graphs, we embrace more color on new GEMS and fix everything around selections to view the data.
- Each view contains 2-3 graphs/charts.

## Resources for Navigating the New GEMS Website:

1. [Website Navigation Guide](#)
2. [GEMS General Website Navigation tutorial video](#)

# Complete Look at GEMS Data

## How is data organized in GEMS?

The data in GEMS is organized into three data domains:

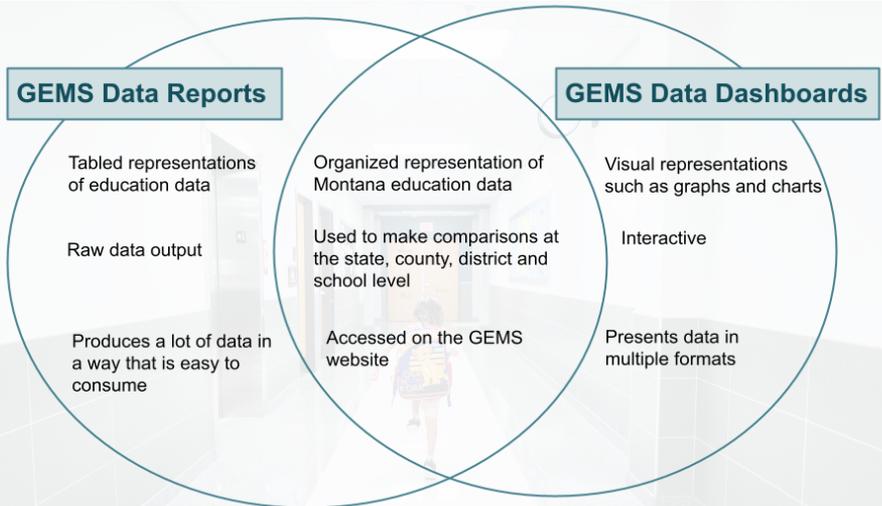
1. student data domain
2. school/district data domain
3. finance data domain

Specific data is stored in the domain where it is most relevant. For example, details and data on school programs such as traffic education would be placed under the school/district data domain.

Each of the data domains in GEMS presents specific data in two ways:

1. data dashboards
2. data reports

The overall purpose of both the dashboards and the reports is to present Montana education data in an accessible form on GEMS. Data dashboards are visual representations (e.g. graphs and charts) that presents data in multiple formats through an interactive modality. In comparison, data reports are tabled representations which produce a lot of raw data in a way that is easy to consume (e.g. Excel files).



## Compare & Contrast GEMS Data Dashboards vs. GEMS Data Reports

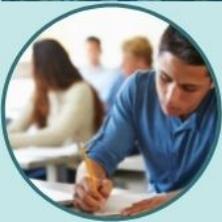
# Complete Look at GEMS Data

*What data is organized in GEMS?*

GEMS stores a lot of data! Broken down into each data domain, the graphic below and on the next page provide a list of the data dashboards and reports available in GEMS. Keep in mind that GEMS is not a static project, rather, we are constantly adding to it based on needs and requests of stakeholders. You may notice a couple pieces of GEMS on the website missing from the list. We invite you to explore them anyway!



## COMPLETE LOOK AT THE DATA IN GEMS



### STUDENT DATA DOMAIN

Student data dashboards and reports are broken into categories of achievement and performance data, student characteristics data, and secure student data reports.

### SCHOOL/DISTRICT DOMAIN

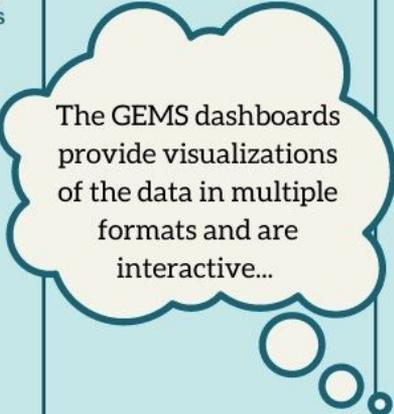
Dashboards and reports on Montana's schools and districts are broken into categories of understanding and comparing school systems, school programs, employee compensation reports, and school program reports.



### FINANCE DATA DOMAIN

GEMS also displays financial, demographic, and grant information for Montana's schools. This data is displayed including school district reports, trustee financial summary reports, per pupil information reports, and county finances reports.

## Complete List of GEMS Dashboards by Domain

Student Domain	School/District Domain	Finance Domain
<b>Student Achievement &amp; Performance</b> <ol style="list-style-type: none"> <li>1. ACT</li> <li>2. College Readiness</li> <li>3. CRT Science Assessment</li> <li>4. Graduation</li> <li>5. Math &amp; ELA Assessment (3-8)</li> </ol>	<b>Understanding &amp; Comparing School Systems</b> <ol style="list-style-type: none"> <li>1. Curriculum Details for College Prep Courses</li> <li>2. District Profile</li> <li>3. District Comparison</li> <li>4. Enrollment</li> <li>5. ESSA Report Cards</li> <li>6. School Profile</li> <li>7. School Comparison</li> </ol>	School Finance Dashboard
<b>Student Characteristics</b> <ol style="list-style-type: none"> <li>1. American Indian Student Achievement</li> <li>2. English Learner</li> <li>3. Enrollment</li> <li>4. Extracurricular</li> <li>5. Foster Care</li> <li>6. Homeless</li> <li>7. Special Education</li> </ol>	<b>School Programs</b> <ol style="list-style-type: none"> <li>1. Career &amp; Technical Education</li> <li>2. School Nutrition</li> <li>3. Traffic Education</li> </ol>	

## Complete List of GEMS Reports by Domain

Student Domain	School/District	Finance Domain
<b>Early Warning System (EWS)</b> <ol style="list-style-type: none"> <li>1. EWS School Dashboard</li> <li>2. EWS Student Summary Report</li> <li>3. EWS Student Level Report</li> </ol>	<b>Employee Compensation</b> <ol style="list-style-type: none"> <li>1. Employee Compensation Summary</li> <li>2. Employee Compensation in Detail</li> </ol>	<b>School District Reports</b> <ol style="list-style-type: none"> <li>1. District Count by Equity Status</li> <li>2. District List by Equity Status</li> <li>3. Year to Year Budget Comparison</li> <li>4. General Fund Recap</li> </ol>
<b>Free Application for Federal Student Aid (FAFSA)</b>	<b>School Programs</b> <ol style="list-style-type: none"> <li>1. School Nutrition E-rate</li> <li>2. Traffic Education Summary Report</li> </ol>	<b>Trustee Financial Summary Reports</b> <ol style="list-style-type: none"> <li>1. Reported Revenues by District</li> <li>2. Reported Expenditures by District</li> <li>3. Ending Fund Balance</li> </ol>
		<b>Per Pupil Information Reports</b> <ol style="list-style-type: none"> <li>1. Per Pupil Revenue Trends by Enrollment Category</li> <li>2. Per Pupil Expenditure Trends by Enrollment Category</li> <li>3. Per Pupil Expenditure Trends by District</li> <li>4. Per Pupil Revenue Trends by District</li> <li>5. Revenue Trends Recap</li> <li>6. Expenditure Trends Recap</li> <li>7. Revenues by Enrollment Category</li> <li>8. Expenditures by Enrollment Category</li> <li>9. ANB Trends by Enrollment Category</li> </ol>
		<b>County Finance Reports</b> <ol style="list-style-type: none"> <li>1. Annual County Equalization</li> <li>2. County Transportation &amp; Retirement Mills Levied</li> </ol>

# Overview of the Dashboards and Reports on New GEMS

These two platforms used on the new GEMS website provide access to data across all three of the data domains. As evident in the Venn Diagram provided on page 14, the reports and dashboards utilize distinct functionality to provide Montana education data to GEMS users via distinct platforms. Depending on your data inquiry, you may choose to explore a dashboard, report, or both. The next couple of pages provide you an overview of how to navigate and use both the dashboards and reports, however this content is limited. You are strongly encouraged to review the resources linked for both the dashboards and the reports. These tutorial guides and videos provide the most comprehensive overview of using either functionality. You are also invited to simply begin exploring either functionality on your own. Remember, the revision of the GEMS website is intended for ease of navigation and use. Even further, the dashboards are designed for user interactivity. You may find that the best way to learn these platforms is just to begin using them.

Go to [gems.opi.mt.gov](https://gems.opi.mt.gov) to begin exploring!



# GEMS Dashboard Navigation

The data dashboards on GEMS are interactive tools that allow for the presentation of data in multiple formats. These dashboards feature advanced tools that allow for the analysis of data. Interactive means the user can apply filters on the data visualizations to investigate specific inquiries and make comparisons at the state, county, district and school level.

- Buttons** – The buttons located in the light blue band are associated with page navigation. Selecting one of these buttons will switch between the offered pages.
- Slicer Menu** – Selecting the arrow will expand a drop-down menu containing the filtering options available on the dashboard. Each drop-down menu will be different depending on the underlying data.
- Visualizations** – These are graphic representations of data. There are many types of visualizations. The selected charts, cards, or maps displayed are specifically chosen as the best representation of the data from the Office of Public Instruction's subject matter experts.
- Sub-Buttons** – Any buttons selected outside of the light blue band, located at the top of the dashboard, change visualizations on the currently selected page.

## Helpful Hints

- By single clicking on a data point, filters are applied, and other visuals will automatically update based on the selection.
- Hovering your mouse over an object will allow you to see additional information in the Tool Tip.

## Slicer Menu

- Slicers** – These are features that filter the dashboard based on the data element described in the title.
- Search** – The user can search for a county, district, or school by name using this feature.
- Exit Button** – Selecting this button will close the slicer menu for full view of the dashboard.

- Tabs** – Provide the user the option to select between the dashboard and other available information related to the dashboard. More tabs will be available in the future.
- Drill Up Mode** – Select to drill up to the next data level after the data has been drilled down.
- Drill Down Mode** – Enabling this feature allows the user to single click on a data point and the data will expand to the next level of the hierarchy. For example, selecting the bar for 2020, with drill down enabled, will display the meals served by month for that year.
- Expand to Next Level** – Selecting this will expand down to the next level of the hierarchy for all data points in the visualization.
- Focus Mode** – Allows the user to expand or pop out a visual to see more detail.
- More Options** – Provides users with choices to export data, see raw data, or spotlight the visualization.

## Contact Us

For technical support and help using GEMS, please contact the GEMS Help Desk:  
 Phone: (406) 444-5222  
 Email: [opigemshelpdesk@mt.gov](mailto:opigemshelpdesk@mt.gov)

- Export data** – Allows user to export data as an Excel spreadsheet or a csv.
- Show as a table** – Displays raw data below the represented visuals.
- Spotlight mode** – Highlights the selected visual and dims all other visuals.

## Resources for Navigating the GEMS Data Dashboards:

- Dashboard Navigation Guide
- [GEMS Dashboard Navigation video](#)

# *GEMS Dashboard Navigation*

The data dashboards on GEMS are interactive tools that allow for the presentation of data in multiple formats. These dashboards feature advanced tools that allow for the analysis of data. Interactive means the user can apply filters on the data visualizations to investigate specific inquiries and make comparisons at the state, county, district and school level. Some of these interactive features include:

## **Slicer Menu**

The slicer menu is found in the upper left-hand corner of the dashboard environment as a downward pointing arrow icon. Selecting this arrow will populate a menu of options by which the user can apply filters to the dashboard. The data filter options vary by dashboard as they were selected in collaboration with the data stewards for what is a best fit for the data. Some common filter options in the Slicer Menu include location, timeframe or school year, and race/ethnicity.

## **Dashboard Pages**

Each dashboard environment on GEMS contains multiple pages, and each page contains multiple visualizations. Buttons to access the different dashboard pages can be found at the top of the dashboard environment in a blue bar, the same bar where the Slicer Menu is located.

## **Ellipsis for More Options**

When hovering over any of the visualizations contained within a dashboard, two small icons will appear in the upper right-hand corner of that visualization. The first is "focus mode" which allows you to enlarge and highlight the visualization. The second is an icon with an ellipsis for "more options." There are several interactive features within the "more options" list including the ability to turn any visualization into a table, the ability to sort a visualization by ascending or descending, the ability to spotlight the visualization, and the ability to export the data contained in the visualization into a file type such as xlsx (Excel) or a csv file.

## **Maps**

The interactive maps are a visualization included in most GEMS dashboards. There are several interactive features of the maps including the ability to zoom in and out, and point and click to select a specific location. When hovering over a specific location on the maps, a Tool Tip will populate providing the user further details or information.

Resources for Navigating the GEMS Data Dashboards:

- [Dashboard Navigation Guide](#)
- [GEMS Dashboard Navigation tutorial video](#)

# GEMS Reports Navigation

While a report does limit user interaction with the data, they do produce a lot of data in a format that is easy to consume. Some specificity can be applied when pulling a report on GEMS such as year and school or district.

**Trustees Financial Summary Reports**

Reported Revenues by District    Reported Expenditures by District    Ending Fund Balance

**Fiscal Year**  
Select

**County/Legal Entity**  
Select

**Submit**

After selecting the area of interest for each field, click the submit button to populate the report.

## Complete List of Reports Available Across Domains in GEMS

School and District Reports
<i>The school and district staff SSRS reports stored in GEMS include the following:</i>
Employee Compensation Summary
Employee Compensation in Detail
<i>The school and district programs SSRS reports stored in GEMS include the following:</i>
School Nutrition E-Rate
Traffic Education Summary Report
Secure Student Reports (*login to secure GEMS required)
<i>The secure student data reports stored in GEMS include the following:</i>
<a href="#">The Early Warning System</a>
<a href="#">Free Application for Federal Student Aid</a>
<a href="#">College Readiness Indicator Report</a> **Report No Longer Available**
Finance Reports
<i>The school and district finance SSRS reports stored in GEMS include the following:</i>
District Count by Equity Status
District List by Equity Status
Year to Year Budget Comparison
General Fund Recap
Fund Balance Limitations
Flex Fund Balance Limitations
<i>The trustee finance summary SSRS reports stored in GEMS include the following:</i>
Reported Revenues by District
Reported Expenditures by District
Ending Fund Balance
<i>The per pupil information SSRS reports stored in GEMS include the following:</i>
Per Pupil Revenue Trends by Enrollment Category
Per Pupil Expenditure Trends by Enrollment Category
Per Pupil Expenditure Trends by District
Revenue Trends Recap
Expenditure Trends Recap
Revenues by Enrollment Category
Expenditures by Enrollment Category
ANB Trends by Enrollment Category
<i>The county finances SSRS reports stored in GEMS include the following:</i>
Annual County Equalization
County Transportation & Retirement Mills Levied

## Resources for Navigating the GEMS Data Reports:

- [Reports Navigation Guide](#)
- [GEMS Reports Navigation tutorial video](#)

# *GEMS Reports Navigation*

While a report does limit user interaction with the data, they do produce a lot of data in a format that is easy to consume. Some specificity can be applied when pulling a report on GEMS such as year and school or district. Field selections prior to generating the report help establish some of this specificity:

## **Field Selections**

Depending on the type of report being pulled from GEMS, there will be various field selections the user must select prior to submitting for the report to generate. These are not limited to but often include a school or fiscal year, as well as a school or district location.

Once a report is generated, there are a few universal features of the report environment that allow the user to navigate and export the report. These navigation features include:

## **Page Toggle**

In the menu above where the report generates, the first navigation feature provided is to toggle between the pages of the report. The arrows allow the user to move forward or back in the report itself.

## **Page Zoom**

Using the zoom feature in the menu, the user can focus in on particular parts of a report for ease of visibility.

## **Save/Export**

The save disk icon in the menu provides a dropdown list of available file formats the generated report can be saved as. Once a file type has been selected, the report will be exported to the users computer.

## **Print**

The generated report can be directly printed as well using the print icon in the navigation menu.

## **Find | Next**

The "Find | Next" search feature of the navigation menu can be utilized to search a report for a specific word or element, simplifying the search process for the user.

## **Resources for Navigating the GEMS Data Reports:**

- [Reports Navigation Guide](#)
- [GEMS Reports Navigation tutorial video](#)

# Making a Data Request

Even after utilizing your skills and knowledge of the data and tools on the GEMS website, you may find you still are unable to track down the specific data you need. If you find yourself in such a scenario, you can make a data request and our SLDS team will work with you to gather the data you need. Making a data request can be accessed right from the GEMS website. Select the "Need help? Contact us." link at the bottom of the homepage. From here, the "Submit a Data Request" link will direct you to a form that will prompt you to complete the details of the data you are looking for. If you have any questions along the way, don't hesitate to reach out to our GEMS Helpdesk by calling 406-444-5222 or emailing [opigemshelpdesk@mt.gov](mailto:opigemshelpdesk@mt.gov).

STILL CAN'T FIND WHAT YOU'RE LOOKING FOR!

**gems**  
Growth and Empowerment

Contact Us & Other Support

Access to Secure GEMS  
Request Access to Secure GEMS  
Request Access to Secure GEMS - OPI Employee

Not finding the data you're looking for?  
Submit a Data Request

Password Resets & Technical Support  
Password Reset  
GEMS Password Reset  
If you continue to have issues logging in, please reach out to the OPI Help Desk, 406-444-5222.

Technical Support  
[opigemshelpdesk@mt.gov](mailto:opigemshelpdesk@mt.gov)  
406-444-5222

NAVIGATION GUIDE FOR NEW GEMS

Explore Data

STUDENT | SCHOOL & DISTRICT DATA | FINANCE

STUDENT PRIVACY & DATA ACCESSIBILITY | DATA USE IN EDUCATION

Need Help? Contact Us.

Purpose: Make the Students Fair  
Families & Students | Educators | Leadership | Contact | Safety & Student Support

Data Request

Fill out this form to request data that is not shared on GEMS. Include as much information as you can, and we will contact you if we have any questions.

Allow 1-2 weeks for your request to be completed.

You can review our Student Records Confidentiality Policy at <https://op.mt.gov/records-privacy>  
[Request Student Privacy \(2-29-2016-Governance-Student-Records-Confidentiality-Policy\)](#)

[nicole.knelling@opconnect.org](mailto:nicole.knelling@opconnect.org) (not shared) Switch account

Next Page 1 of 7 Clear form

**gems.opi.mt.gov**

## Resources for Making a Data Request:

- **Making a Data Request tutorial video**
- **GEMS Helpdesk:** 406-444-5222 or [opigemshelpdesk@mt.gov](mailto:opigemshelpdesk@mt.gov)
- **Data Request Direct Email:** [opidatarequest@mt.gov](mailto:opidatarequest@mt.gov)



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## Starting to Use GEMS

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Put your new knowledge and skills of GEMS to the test and consider how you may use the data in GEMS moving forward.

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## *GEMS Scavenger Hunt*

With your newly acquired background knowledge and skills, it is now your opportunity to practice searching for and analyzing some of your school or district's data treasures stored in GEMS. The following has two parts: 1) the scavenger hunt and 2) the reflection of analyzing data revealed in the first part. Both parts are designed to be accessible, relevant, and practical by focusing specifically on your school or district data and by asking questions that get at the heart of revealing your school or district's data story over time. The reflection portion is the space for you to explore how data-informed next steps could continue to inspire stories of growth for your students and school team.



## Part I.

### Directions.

*Using your new knowledge and skills of GEMS, attempt to answer the following questions pertaining to your particular school or district. You are required to complete 4 questions of choice for the assignment to be considered complete, however feel free to attempt and answer all of the questions if your time allows. Please type your answers in a different color. If data becomes masked as you drill down to your specific school with layered filters, and you do not have a GEMS Secure account, you can explore for your district or for your county.*

Inspiration for this activity is from the text, Data Analysis for Continuous School Improvement (Bernhardt, 2018) Figure 3.1

What is the trend of total student count over time in your school or district? What is the trend of students of color in your school or district overtime? Does a trend exist for enrollment by SES or free/reduced lunch status? For the most current school year, what is the count of students by grade level?

- What is the proportion of students in your school or district who receive Special Education? Further disaggregate to collect SPED student counts by disability, gender, race/ethnicity, and English language fluency.
- What is your school (high school only) or district's overall cohort graduation rate? How does this rate change when disaggregated by race/ ethnicity, SES or free/reduced lunch, English language fluency, homeless status and SPED status?
- What is the average number of students leaving (via dropout) middle school (7-8) in your school or district over the last 4 years? Leaving (via dropout) high school (9-12)? What is the percent of students leaving (via dropout) your school or district broken out by race/ethnicity? By SES or free/reduced lunch? By English Learner status? By homeless status? By SPED status?
- How many students are participating in any kind of extracurricular activity in your school or district? Do more students participate in a particular kind of extracurricular (by athletics or by activity)? How does participation compare when broken out by gender?
- How many students in your school or district participated in traffic education last year? In CTE? In the National School Lunch Program? In the Summer Food Service Program?
- Compare and contrast your school or district's proficiency levels and participation rate with the math and ELA Smarter Balanced assessments to the state. What data seems to "pop out" or what trends emerge through this comparison? What do you notice happens to proficiency level trends as you disaggregate by grade level? By gender? By race/ethnicity? By SES or free/reduced lunch? By SPED status? By language fluency? By homeless status? By migrant status?

- What percentage of students in your school or district are meeting the college readiness score for the ACT? What about by subject? How does the proportion of students meeting college course readiness indicators change when disaggregated by gender? By race/ethnicity? By SES or free/reduced lunch? By SPED status? By language fluency? By homeless status?
- Compare and contrast the counts of students in your school or district who graduate each year to the number of students who enroll in a MUS post-secondary institution. What patterns or trends are there for this comparison over time? Which institutions are those students who enroll in college attending?
- What is the count of graduates from your school or district who are enrolled in college remedial classes? What do you notice about these student counts as you break down by gender, race/ethnicity, SES, SPED status, language fluency, and enrollment period?
- What are the most recent school year's graduation and dropout rates for students in your school or district who participate in CTE? What three areas of concentration have the highest student participation counts in your school or district? What do you notice about these student counts when broken down by gender? By race/ethnicity?
- How has your district's total homeless student count changed over the last 5 years? By specific school(s) location? Of these students, how many identify as an English Learner? As a SPED student? What do you observe of these student counts as you apply filters for gender? For race/ethnicity? How many of your homeless students had 2 or more school enrollments in the most recent school year? Foster students with 2 or more?
- Describe the trend for your district's per pupil revenue trend over the last 5 years. How does this compare to your district's per pupil expenditure trend over the last 5 years? What are the two largest funding sources for your district?

## **Part II.**

### Directions-

*After searching and analyzing some of your school or district data using the guiding questions above, reflect on the following questions:*

- What patterns and trends do you notice emerging from your school or district data? What is surprising or unexpected?
- What other data would you like to explore or what do you feel is not captured?
- What strengths do you observe about your school or district data? What needs have been revealed?
- What are some possible next steps to respond to the patterns, surprises, strengths or needs?

We hope this introductory packet, which is a condensed and downloadable version of the Hub course (Data Informed: An Introduction to GEMS), has provided you with an overview of Montana's SLDS. As you begin to explore the data available, you will find there are several resources built into the site for you, including but not limited to tutorial documents and tutorial videos for each unique dashboard. In addition, our GEMS team is always eager to support you in your data inquiry. Please don't hesitate to reach out to the GEMS Helpdesk.

Contact us at the  
GEMS Helpdesk  
opigemshelpdesk@mt.gov  
(406) 444 - 5222



A project by the Montana Office of Public Instruction's (OPI) Statewide Longitudinal Data System (SLDS) team. The Montana SLDS, or GEMS (Growth and Enhancement of Montana Students) provides access to data collected from Montana's educational community to help inform the OPI, schools, educators, and the community about the success of Montana's schools.

Go to [gems.opi.mt.gov](https://gems.opi.mt.gov)

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