

2013 CEFPI Utah
Educational Facility
Innovation Award

Endeavour Elementary

Davis School District
Endeavour Elementary School
New Primary School
Jeanne Jackson, FAIA



Project Narrative

Endeavour Elementary, named after the space shuttle, stimulates children's imaginations with a playful and appealing astronomy theme; lighting, signage, play equipment, and floor and ceiling patterns reinforce the theme. Visitors and students cross a scale model of our solar system laid out graphically in the entry plaza to enter the school adjacent to the Media Center, which features spectacular planetarium quality planets and moons visible from outside.

The school is designed to support a project-based educational pedagogy. Students are divided into four smaller groups, (one specifically for kindergartners), each clustered around a central open space that incorporates a flexible learning space, daily access to technology, and space for many different types of activities. Each color coded small learning community is named for a different galaxy; constellations laid out in the collaboration areas' carpet tiles pique student interest and provide an additional layer of identity for students. Within each of these "galaxies", teachers have their own place to prep and collaborate with each other.



Small Learning Communities can be individually secured, allowing the school to be 'selectively permeable' for community activities in the evening – in other words, access can be restricted or permitted to each zone of the building – Media Center, Multipurpose Room, or a Learning Community, for flexible use by the larger community. Exterior courtyards between the wings are carefully designed in 4 unique zones to provide an extended outdoor learning environment – students "Listen", "Act", "Experiment", and "Think" in specifically designed outdoor spaces.

While the school district does not typically seek LEED accreditation, they are extremely interested in high performance sustainable facilities. As detailed in the technical information, Endeavour is designed to fulfill very high energy performance criteria.

Project Narrative, Continued

Site Considerations

- The building was oriented to take advantage of proper solar orientation for the classrooms with shading devices on the south facing windows
- Visitors to the school enter between the administrative offices and the “Planetarium” – i.e., the Media Center - which bracket the front entry. These spaces feature large expanses of glass that take advantage of the stunning mountain views
- Natural landscaping was utilized everywhere except the actual playfields in order to promote water conservation

Technology Systems

- All classrooms and collaboration areas incorporate sound reinforcement
- Ceiling-mounted projectors in all classrooms
- Wireless computer capability throughout building

Technical

- Low maintenance ground stained concrete floors with inlaid metal stars and moons, are utilized throughout circulation and restroom areas
- Sustainable ground source heat mechanical system
- Proper solar orientation for all classrooms, shading devices on the south facing windows
- High output T-5 lamping with automatic dimming and motion detectors
- Locally-produced concrete block building materials
- High performance glazing
- Highly insulative building envelope

Narrative – Planning process, stakeholders and goals

Endeavour Elementary began as the latest iteration of a prototype plan that Davis School District had successfully utilized several times before. The building was a prototype in the true sense of the word – post-occupancy evaluations of the most recently completed school were used to influence the design and the mechanical and electrical systems were reconsidered for each school. At Endeavour, however, the process was far more in depth than it had been for the previous versions.

While the earlier prototypes had been very successful, the Superintendent challenged the design team to push the envelope on what a school building can be. A committee was established with the architects, senior district administration, and several faculty and staff to participate in the process. To begin, more in-depth post-occupancy interviews were conducted at all the prototype schools built to that point. Several design workshops were conducted with participants from all levels of the administration and staff.

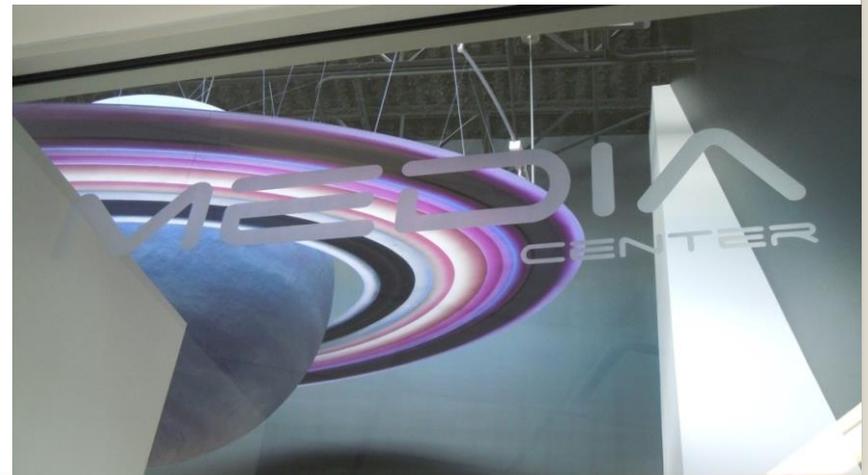
One of the main objectives that came out of this process was the desire to increase the educational saturation within the building. Using the buildings as a teaching tool has been well established; indeed the previous versions of the school had included educational pieces throughout to engage the students. The question was, could the idea of the building of a teaching tool be expanded to create place that not only enables education but truly fosters and nurtures that education? Additional goals that came out of the planning process were to give the school a proper identity that the students could be proud of and to create a more fun and playful atmosphere that would excite the students. After the objectives were identified, it became clear to the team that these were not distinct items to be addressed and checked off a list. The only way to successfully satisfy all the goals was to consider them holistically and seamlessly incorporate the educational components through all aspects of the building. The result of that integration is Endeavour Elementary School.

Narrative – Planning process, stakeholders and goals

A theme would be introduced to the prototype that would be pervasive and evident in all areas of the building from the exterior site down to the floor finish. The intent was to create a science based theme that the students would be unable to ignore and would excite their imagination everywhere they went in the school. Space and Astronomy was identified as a theme that was robust enough to engage the students and contribute ample educational opportunities to meet all the goals set out by the committee.

As the design progressed, the team became more and more excited at finding new and innovative ways to incorporate the new theme. The heart of the school had always been the Media Center –it was located right at the entry and right at the pivot point of the building. Because this space was so important to the school, it was here that the most visible parts of the theme would be placed. Large scale, custom painted, museum quality planets were designed to

hang in the Media Center, highly-visible from both the interior and the exterior. The theme was extended into the houses in several ways. They were each named after different galaxies and the entry included large, high resolution images of those galaxies from the Hubble Space Telescope. The carpet pattern in each houses emulated star patterns from the galaxies as well. All of this was documented in easy to understand signage for the students to discover. All this led to a school that is a vibrant, fun environment for the students in which they can't avoid learning.



Narrative – How the completed project accomplished desired methodology and goals

Typically it is very difficult to accurately evaluate the efficacy of architectural moves. How does one scrupulously demonstrate that a school building improves and enhances the educational environment of the students? In the case of Endeavour Elementary, however, it is very easy; the school has hard data showing the success of the program, examples of which have been included in this package. Across the board, Endeavour is out performing all other public schools in the state. In the most recent school rankings issued by the Utah State Comprehensive Accountability program, Endeavour ranked #1 in the state with 584 points out of 600, compared to the state average of 435 points.

The school district has a database of student achievement it uses to keep track of individual student performance and improvement over time. At Endeavour, in Science, Math and Language nearly 100% of the student population is proficient, the highest level in the district. More importantly, in those same subjects, nearly 100% of the students showed improvement from the year

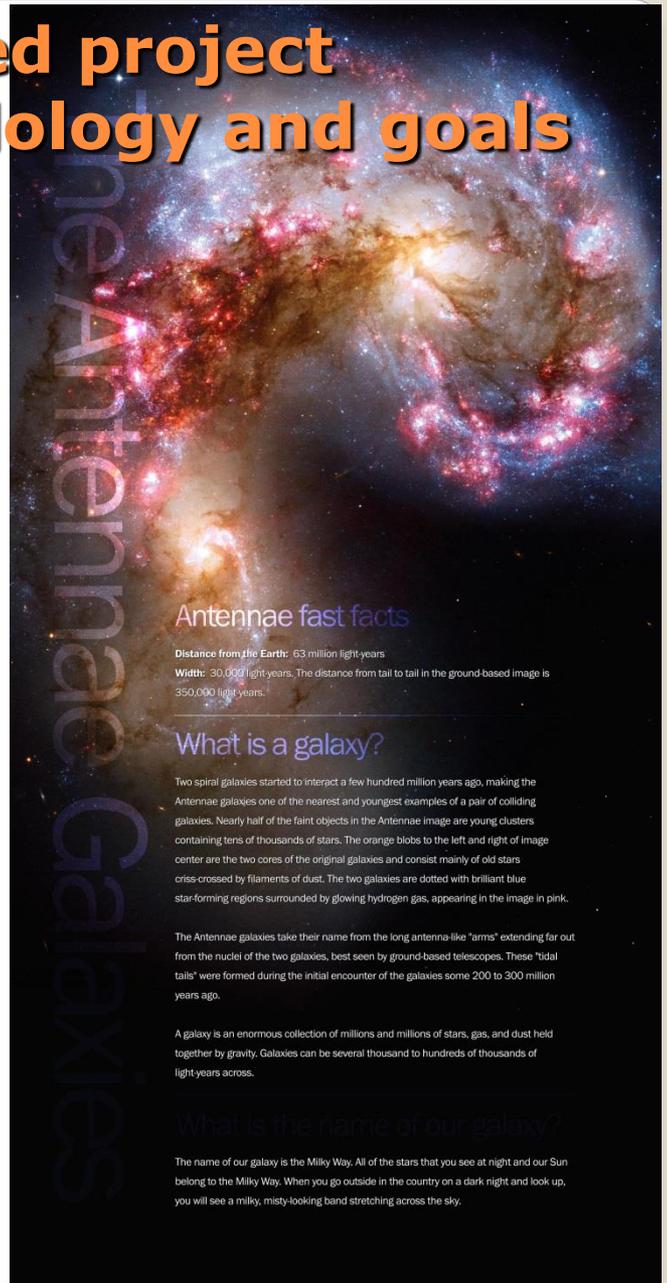
before. The only thing that changed for the students that caused improvement was moving to a new school. But what helped facilitate that improvement? The faculty and staff at Endeavour embraced the space and astronomy theme of their school and integrated it into all aspects of their curriculum and daily life. For reading assignments, biographies of astrophysicists are discussed. Naturally, astronomy and space exploration are favorite topics for the sciences. Every department has embraced the challenge of integrating the theme of the school into the lesson.



Narrative – How the completed project accomplished desired methodology and goals

And the administration has gone beyond that to keep kids' heads in the stars. When talking to students they refer to which galaxy they are in instead of which grade. Rather than an honor roll to highlight high performing students, they have a list of Super Nova. The principal has stated that the theme of the building and the informative signage are directly related to the high performance of the students. It energizes them and makes them excited to learn more. And the cross-curriculum integration has enabled all departments to benefit and improve, not just the sciences.

A fun atmosphere and iconic graphics throughout the building are punctuated with informative signs describing what the students are seeing. Each display is coupled with a description written for any child to understand with probing questions designed to encourage the student to think about the topic further – What is a galaxy? How are stars formed? How much of your body is made up of stardust? Both the anecdotal evidence and the hard data evidence prove that the school has exceeded every educational goal that was established. And that same evidence points to the building and its theming as a major driver of that success.



Antennae fast facts

Distance from the Earth: 63 million light-years
Width: 30,000 light-years. The distance from tail to tail in the ground-based image is 350,000 light-years.

What is a galaxy?

Two spiral galaxies started to interact a few hundred million years ago, making the Antennae galaxies one of the nearest and youngest examples of a pair of colliding galaxies. Nearly half of the faint objects in the Antennae image are young clusters containing tens of thousands of stars. The orange blobs to the left and right of image center are the two cores of the original galaxies and consist mainly of old stars criss-crossed by filaments of dust. The two galaxies are dotted with brilliant blue star-forming regions surrounded by glowing hydrogen gas, appearing in the image in pink.

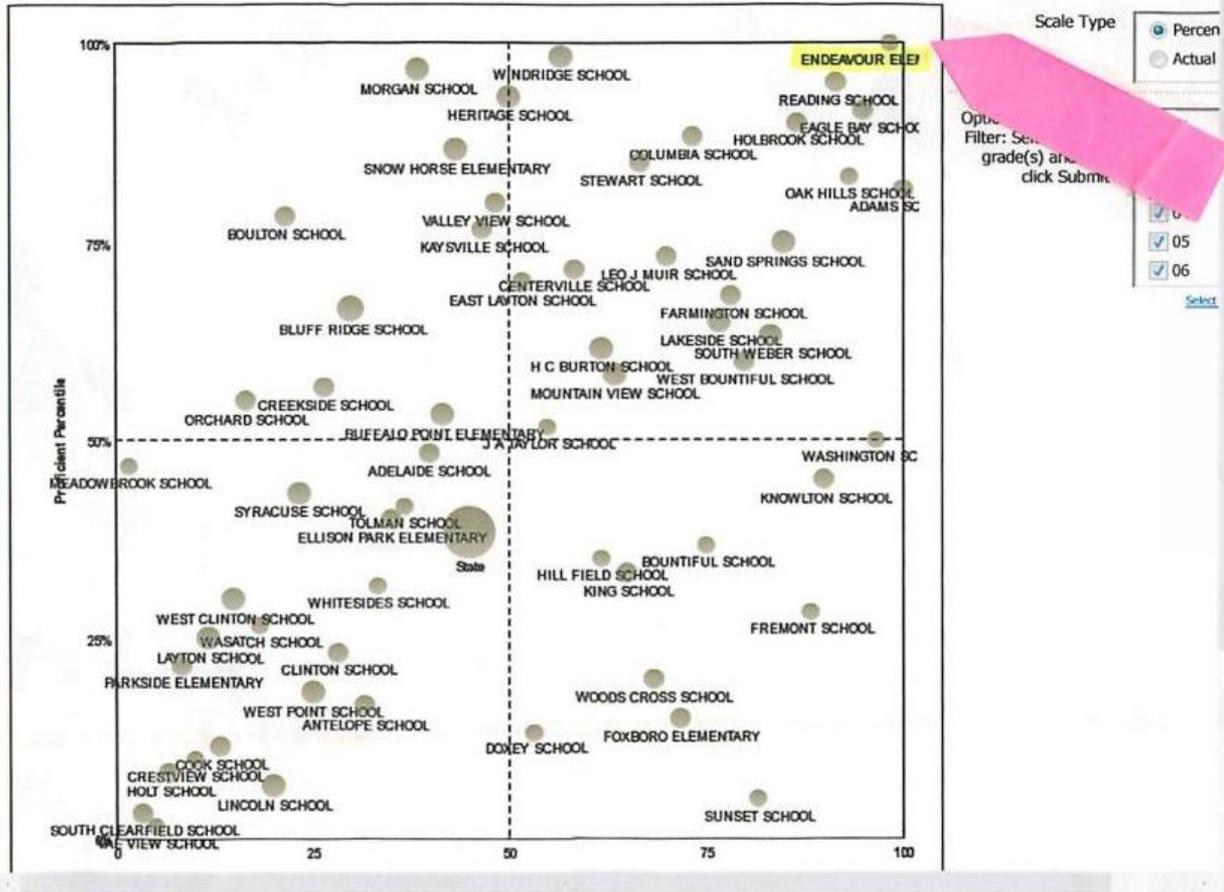
The Antennae galaxies take their name from the long antenna-like "arms" extending far out from the nuclei of the two galaxies, best seen by ground-based telescopes. These "tidal tails" were formed during the initial encounter of the galaxies some 200 to 300 million years ago.

A galaxy is an enormous collection of millions and millions of stars, gas, and dust held together by gravity. Galaxies can be several thousand to hundreds of thousands of light-years across.

The name of our galaxy is the Milky Way. All of the stars that you see at night and our Sun belong to the Milky Way. When you go outside in the country on a dark night and look up, you will see a milky, misty-looking band stretching across the sky.

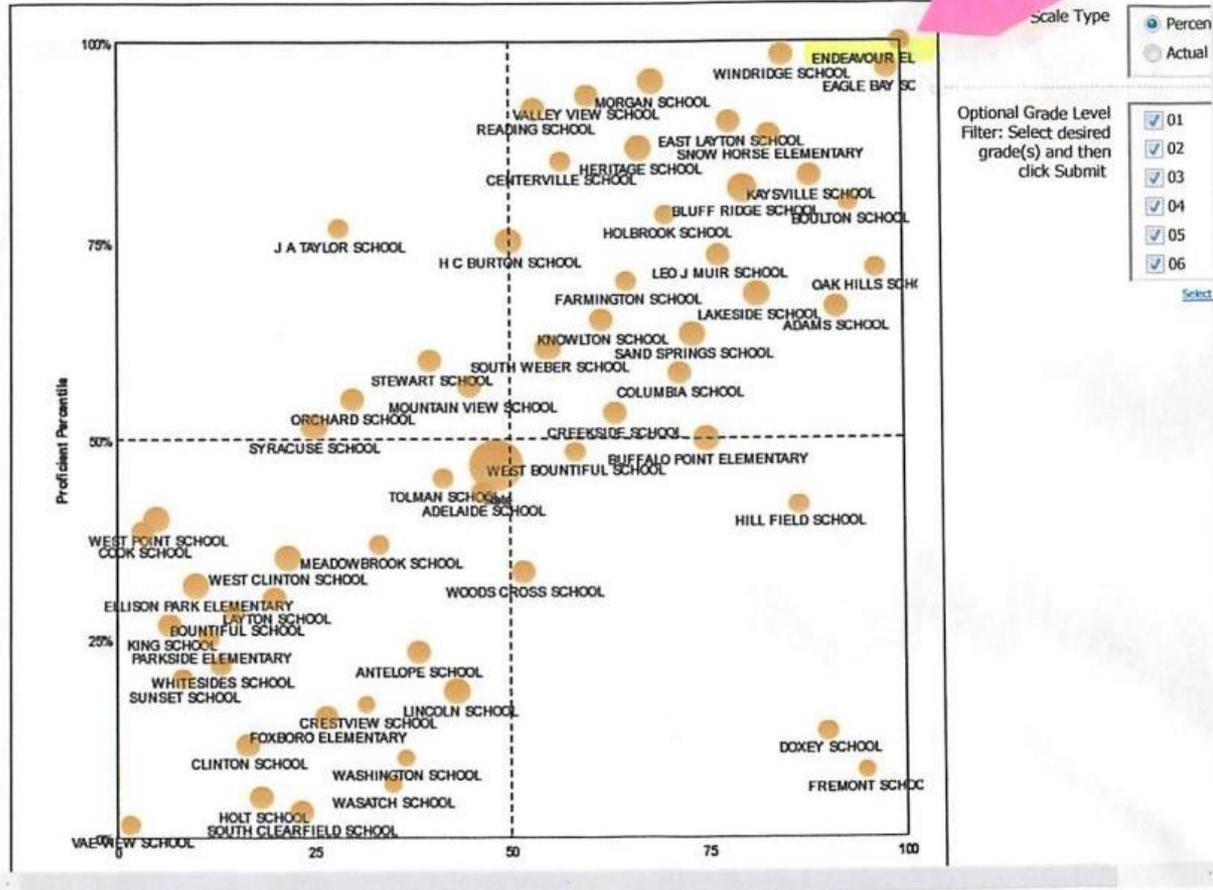
Science Percentile Results for DAVIS DISTRICT (Report filtered by grades: 01, 02, 03, 04, 05, 06)

School Year: 2011	District: DAVIS DISTRICT	Gender: All	SES: All	ELL: All
Grade filter also available	Subject: Science	Ethnicity: All	SWD: All	Mobile: All



Math Percentile Results for DAVIS DISTRICT (Report filtered by grades: 01, 02, 03, 04, 05, 06)

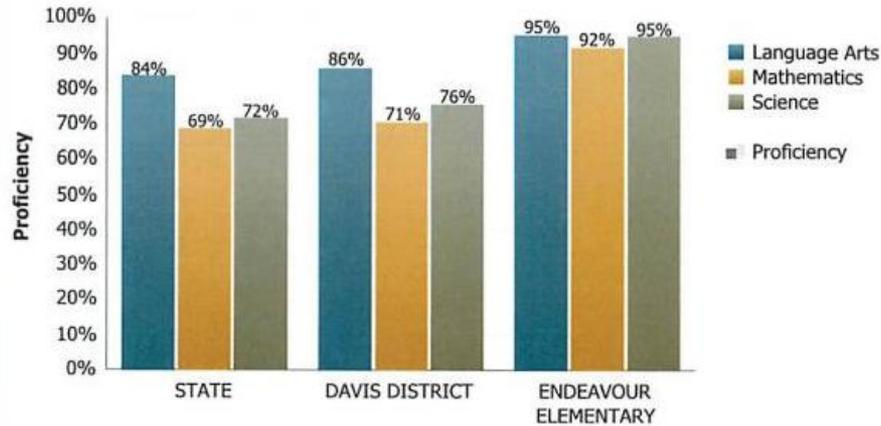
School Year: 2011	District: DAVIS DISTRICT	Gender: All	SES: All	ELL: All
Grade filter also available	Subject: Math	Ethnicity: All	SWD: All	Mobil...



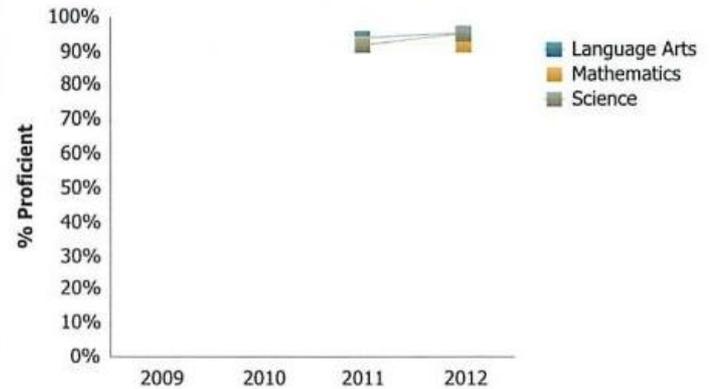
CRT Results for ENDEAVOUR ELEMENTARY

Gender: All	SES: All	ELL: All
Ethnicity: All	SWD: All	Mobile: All

2012 CRT % Proficient for ENDEAVOUR ELEMENTARY



% Prof Over Time for ENDEAVOUR ELEMENTARY



Progress Scores

	2009	2010	2011	2012
Language Arts			222	221
Mathematics			235	226
Science			239	226

Percent Proficiency

	2009	2010	2011	2012
Language Arts			94%	95%
* Mathematics			92%	92%
Science			92%	95%

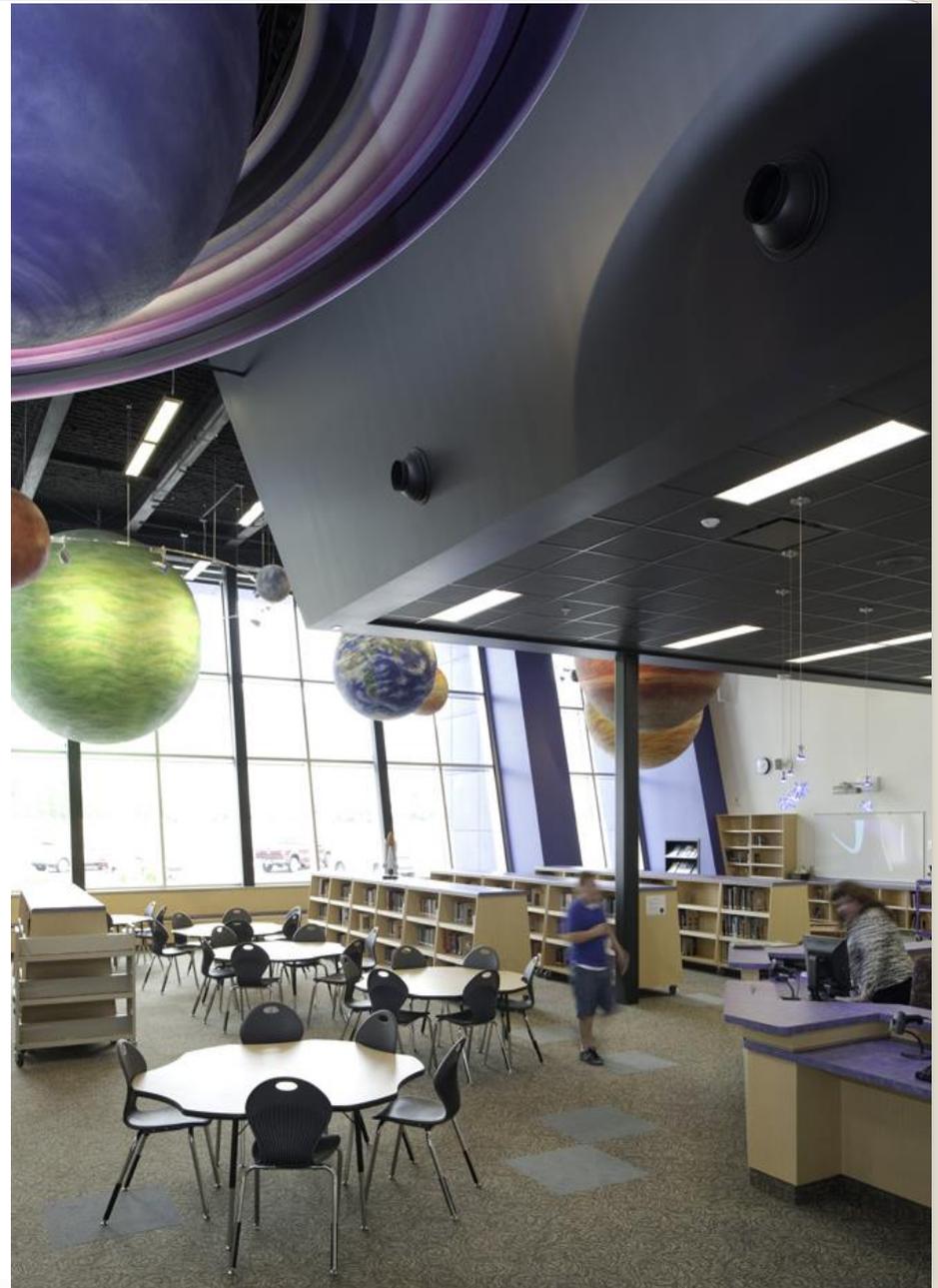
* Mathematics scores from 2009 received a new cut score which changed the scaling and equating. Data from 2009 and on are not comparable to prior years.

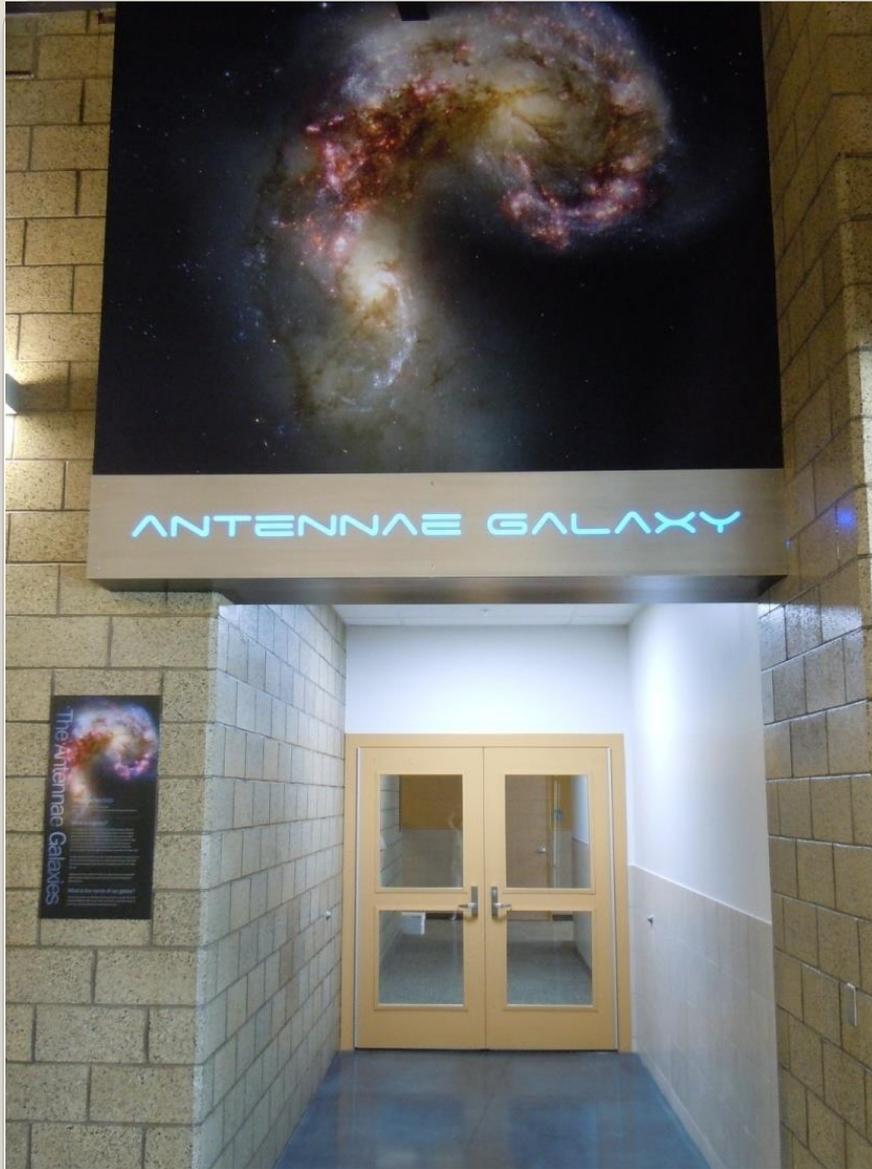


Front entry with view of planets in Media Center. Visitors and students of Endeavour Elementary cross a scale model of our solar system laid out graphically in the entry plaza.



The Media Center is intended to excite students' imaginations besides the planets, space themed quotations and graphics are sandblasted on the glazing.





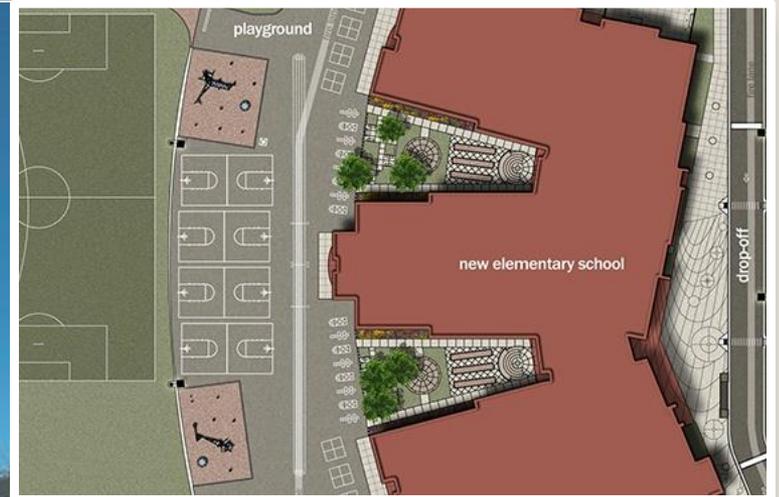
Each Small Learning Community is named after a different type of Galaxy - visual imagery is from The Hubble Space Telescope.



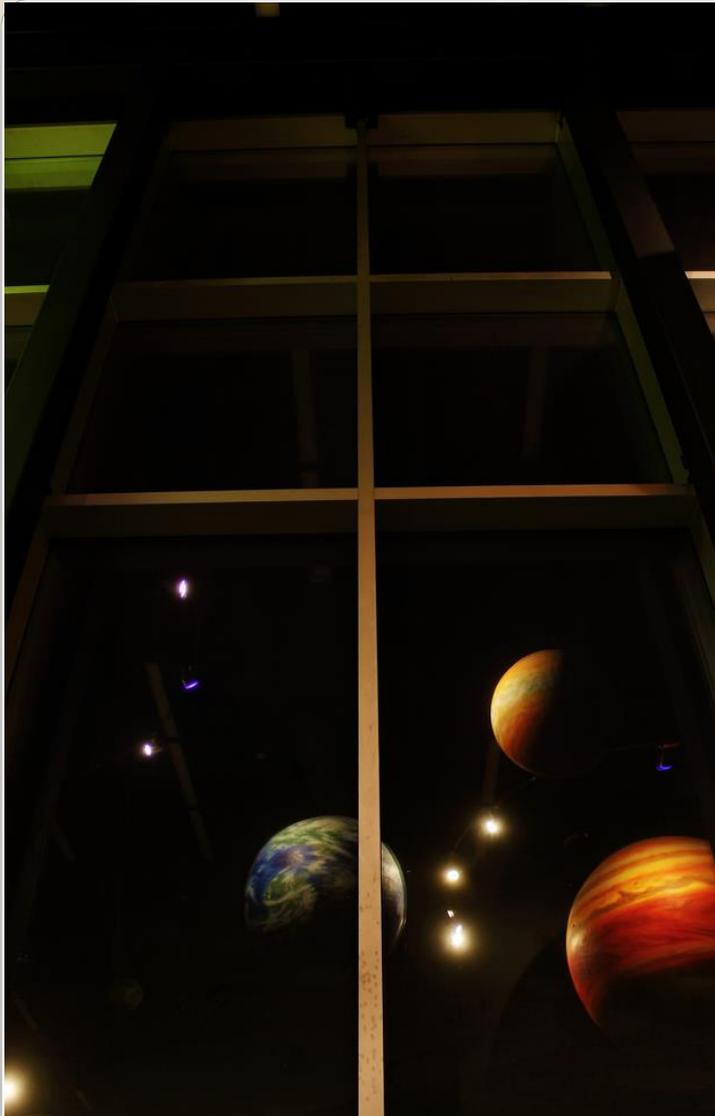
The daylit Collaboration Spaces are highly supervisable from classrooms, supporting multiple learning activities.



The feature window of the Multipurpose Room not only provides valuable daylighting, it highlights the Hubble image of the Eagle Nebula.

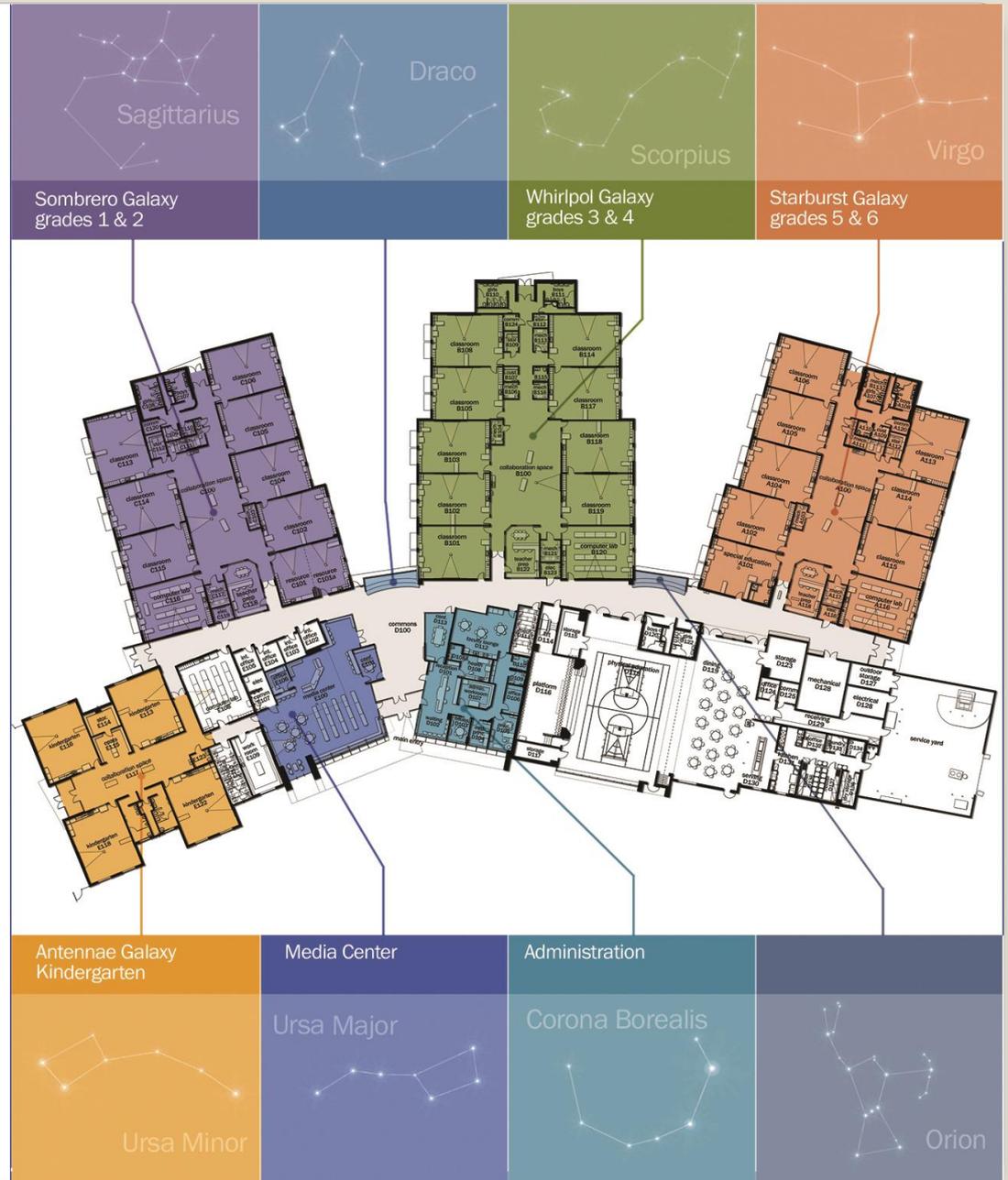


One of two courtyards between Small Learning Communities. Courtyards include 4 distinctly different zones, planned to accommodate different activities: "Listen", "Act", "Experiment", and "Think".



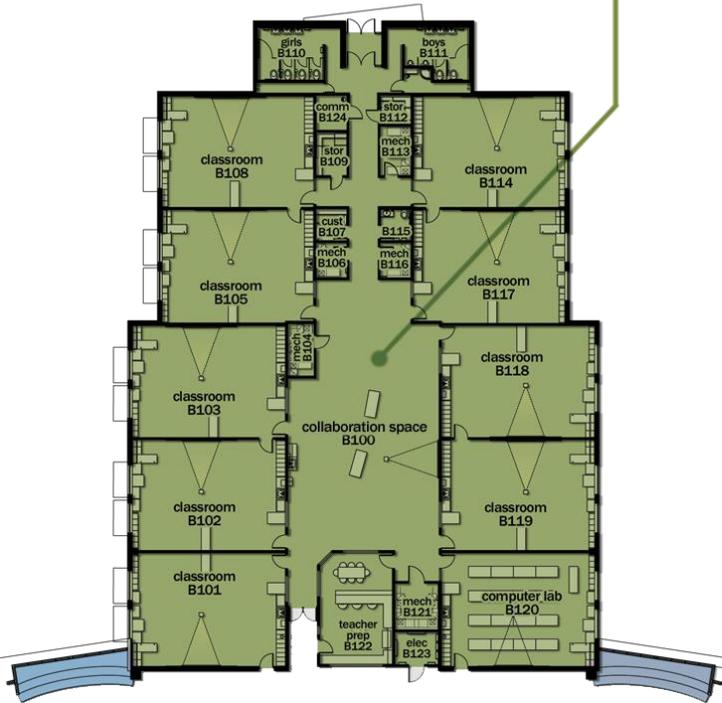
Endeavour Elementary stimulates children's imaginations with a playful and appealing astronomy theme; lighting, signage, play equipment, and floor and ceiling patterns reinforce the theme throughout the school.

Endeavour Elementary School Floor Plan, Level 1



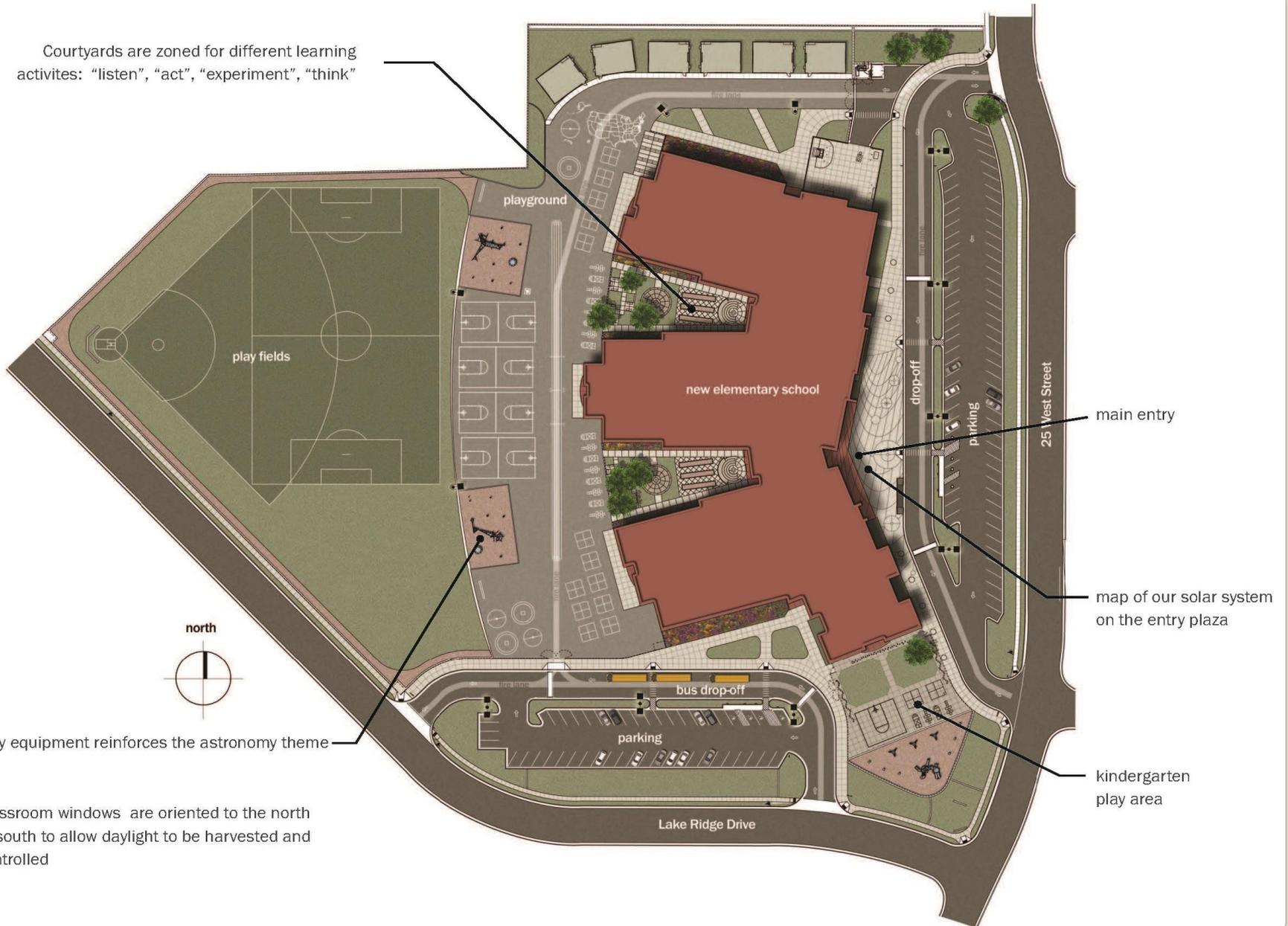


Students gather in the stepped area named after the Constellation above their heads – Draco.



The daylit Collaboration Spaces are highly supervisable from classrooms, supporting multiple learning activities.

Courtyards are zoned for different learning activities: "listen", "act", "experiment", "think"



Play equipment reinforces the astronomy theme

Classroom windows are oriented to the north or south to allow daylight to be harvested and controlled

main entry

map of our solar system on the entry plaza

kindergarten play area

Project Details

1. Project Name	Endeavour Elementary School	
2. District Name	Davis School District	
3. Award Category		
4. Superintendent	Dr. W. Bryan Bowles	
5. Contact Person	Name:	Gary Payne
	Email:	gpayne@dmail.net
	Phone Number:	801.402.5346
6. Type of Facility	New Elementary School	
7. Number of Students Impacted	900	
8. Project Size	74,870 square feet	
9. Occupancy Date	August 2010	
10. Design Professional	VCBO Architecture	
11. General Contractor	Hogan & Associates Construction	

Print, Sign, Scan and Submit with Package

Name of Project: Endeavour Elementary School

Location of Project: Kaysville, UT

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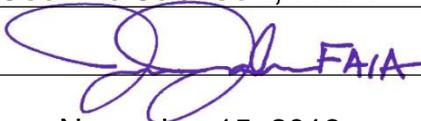
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School District: Davis School District

Responsible Party/Photographer: Dana Sohm, Sohm Photografx

Print Name: Jeanne Jackson, FAIA

Signature: _____



Date of Release: November 15, 2013

Photo Release: (Return SIGNED copy with your submittal)