

Application of Architectural Concepts



Age Level:

Third grade and up

Subjects:

Art Math Science

Time:

30 to 45 minutes

Materials:

- A copy of the floor plan of the school
- A map of the city, town or county the school is in
- Copies of the school attendance area map for each group of four or five students
- Copy of the Kevin Lynch's Notation System worksheet for each student
- Copy of Kevin Lynch's *The Image of the City,* Cambridge Massachusetts, The MIT Press, 1960
- Local bike map
- Optional: Copy of the City Planning Systems info sheet for each student

Learning Objectives:

- To develop the ability to visualize in three dimensions from a two-dimensional source
- To improve map reading skills
- To increase observational skills through the use of notation systems
- To utilize various systems to organize observations
- To invent new systems for observations

Design Professional:

Notation systems are an architect's tool that may be a new concept to both the teacher and the students. Deciding on a few areas of focus before an investigation of a place allows for the development of more detailed observations.

Teacher:

This activity should be introduced by the design professional since the use of notation systems is an essential element of the practice of architecture.

Rationale:

The world the students live in today bombards them with images. They move through it rapidly in a vehicle or sit immobile in front of the TV. In either case, they are not noticing much but the action.

Notation systems can be a wonderful way to actively involve the students in observing the world around them. The relationship of the systems to maps is very important. Many people are not able to orient themselves in three-dimensional space by looking at a two-dimensional map. Notation systems aid in relating a map to the real place.

The systems suggested here have appeared in textbooks relating to many different disciplines. One reason for their success is because they can be utilized at a variety of scales from the individual classroom to a very large city or a whole country. They provide an excellent basis for comparisons of small areas to large ones or areas of similar size with different elements.

Extensions:

Take walking tours of the school neighborhood using the suggested notation systems.

Have small groups each develop a notation system of three to five items. Try it out on a neighborhood walk, and then share their experiences.

Have the class develop a notation system to be used on a field trip after studying a map of the area to be visited.

Have each student plot the route that they take to and from school on the attendance maps, then write a description utilizing a notation system for the route. The student then exchanges the map with a student who does not know the location of the house and tries to plot the route from the description.

Explore different city plans from around the world and explain why growth happened that way (see the City Planning Systems info sheet for reference). 4.24

Application of Architectural Concepts



A culminating project that has created a great deal of interest throughout the school is to hang several widths of colored butcher paper on a wall in the hall outside the classroom. Cut strips of paper 1/2-inch wide, more or less, in different colors to represent roads, rivers, railroads, etc.

Place them on the butcher paper with masking tape so they can be moved around until the students feel it is about right. Locate the school and other landmarks.

Develop a key for showing these things on the map. A key is another kind of a notation system. Using the lesson for drawing a face and then for drawing a house, have the students draw the place where they live. Reduce these drawings so they will fit on the map. Color them and label them with the architectural style and the student's name. When everything is properly located on the map, glue everything down.

As each student finishes, they place their house in the proper location on the map. Experience has found this evokes a great deal of interest among all the students as they pass through the hall. They want to figure out where their house is located.

Lesson One:

Presenting the activity:

"Today we are going to do an activity that will help you see more of everything that you look at than ever before! People have found that if they decide ahead of time on a few things to look for, they will find more of those things than they ever dreamed were there. Another funny thing is that, while they are looking for those few things, they seem to see a whole lot of other things as well.

"A list of three to five things you plan to look at is called a notation system. Architects use notations systems a great deal. The systems help them get ideas for their building designs, to learn about their client's needs and desires and to analyze the place where the building will be built. This information helps them provide a good design that will fit well into the environment where it is built."

Call attention to the floor plan of the school that has been put up on the wall.

"This floor plan was drawn by an architect so the people who were going to use the school would know how it was going to look and be sure that it would meet their needs. A lot of work went into developing the plan-trying out ideas and making changes-before this final plan was decided upon. After that the plan went to a contractor, who used it to build the building.

"A floor plan is one kind of a notation system. It uses both words and drawings to help you understand where everything is. If you're not familiar with reading a floor plan, it may be pretty hard for you to be able to see how this drawing relates to your school. That is where notation systems come in. Let's see if they can help you."

Put a copy of Kevin Lynch's Notation System on the overhead projector.

"This system was developed by a city planner named Kevin Lynch. It is such a good system that it has been used by people in many kinds of ways. One of the reasons people like it so much is that it works both for looking at a very large space or a very small one.

"Let's start out small and try it on this room."

Hand out the student worksheets. Refer to the teacher worksheet for the method of guiding the students through this system for observing a space.

"You will note that there are just five things listed on this notation system. If you try to look for too many things you get confused and probably won't see much of anything. Let's go down the list one-by-one, and as we talk about it, you fill in your observations in the space left on your sheet."

Follow the directions on the teacher worksheet.

"Nothing we have recorded here is new to you, but you have looked at it in a different way and realized some things about this room that you had never thought of before. That is how notation systems can help keep you from missing something you would really have liked to know about."





Lesson Two:

"Now let's look at the plan of the school again."

Talk the students through a brief analysis of the plan using the notation system. If possible, have them take a walk through the school with a new copy of the student worksheet and then compare their observations of the school in small groups.

Lesson Three:

Divide the class in groups of four or five students. Give each group a copy of the school attendance area map. Put one copy of the map up on the wall. Talk the students through a discussion of this map in relation to the notation system. Each student is to record their examples on their notation system sheet as they did for the classroom. Giving grades for these activities adds an important emphasis.

Lesson Four:

With the students working in small groups, distribute two different types of maps. Have the students use their worksheets to describe the notation systems on their maps. Then have the groups switch maps and do the same process. Put one copy on the wall and talk the students through how both maps relate to notation systems -- noting the similarities between the two.



A R C H I T E C T S I N S C H O O L S C U R R I C U L U M

KEVIN LYNCH'S NOTATION SYSTEM

Let's Get Out and See the World

NAME

DATE

Paths	Ways in which people move through spac- es. They may be main walkways, a bike lane, a dirt path shortcut, streets, freeways, rivers, bus lines, railroads or airwayswhat- ever gets people from one place to another.	Your Notes
Edges	Boundaries between two kinds of activ- ities – a fence, river, freeway, etc. They also are places where the kind of activity changes, such as between a school and the surrounding residential area or a shopping area and an industrial area. They may over- lap each other.	
Districts	Areas that have a common use, such as houses, businesses, manufacturing, ware- houses, waterfront, shipping, farms, parks and recreational areas.	
Nodes	Points where something special happens, such as an intersection, a park, a bus sta- tion, a school, a library, a special meeting place or a shopping mall.	
Landmarks	A special object or place that identifies a certain place, such as a statue, a tower, a sign, a particular store, the corner nearest your home, a favorite restaurant – maybe just the pencil sharpener in your school room.	
New Discoveries	After you have recorded your observations of whatever area has been selected, read over your notes. Now look over the area again and record things you notice that you probably wouldn't have paid attention to, had you not been using a system to help you focus more closely on what you were observing.	

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A R C H I T E C T S I N S C H O O L S C U R R I C U L U M

KEVIN LYNCH'S NOTATION SYSTEM - TEACHER WORKSHEET

Let's Get Out and See the World

Suggestions to the teacher to use in introducing this system to the students for use in implementing an investigation of their classroom. Have the students follow along on their hand-out sheets as you read the description of each element of this notation system. Read one section at a time to initiate a discussion of how that information could be applied to the classroom. The suggestions below may be used to focus the discussion if the students are having trouble making the relationships.

Paths	Paths on maps have different colors and line types to make them distinct and different from the other. List how many different types of colors and lines there are on a map. When you go to school, you might take many different types of paths (roads, bridges, sidewalks, dirt paths, and hallways). How would you show your own path on a map?	
	How the room is entered. How the students go to lunch, recess and other classes. Paths of access to teacher's desk, bookcase, study centers, the sink, etc.	
Edges	Edges in a city can sometimes be very obvious like roads or rivers. However there can be edges to cities that are invisible to the eye. For instance, the Portland growth boundary.	
	Walls of the room, book dividers. A change in the floor covering. The student area and the teacher's. Edges may not be distinctthey often flow into each other.	
Districts	Districts are areas that have things in common. Think of your own school district and your neighborhood. What are the things that are special to those areas? (parks, water, hills, etc.)	
	The classroom is a district of the school. Specific area where certain type of activity takes place. Where there is water might define a district.	
Nodes	Nodes are gathering places where activities happen. Can you think of different places where you meet people to do things?	
	The teacher's desk is probably the most evident node. A reading space or special activi- ty place. The entrance doors and areas for small group activities.	
Landmarks	Landmarks are objects that can help you find your way. Think of the things that you always notice to and from school. (trees, signs, houses, etc.)	
	The room number. Some special thing the students have made. Something that is seen out the window.	
New Discoveries	Maps, like books and other written materials have a right side up. This is usually north. Why do you think that a direction or orientation would be helpful with maps?	
	What have you noticed that you never have seen before? It might be electric plugs, vent grilles, types of materials, spots on the rug or pictures on the wall.	

4.28

Let's Get Out and See the World



Random Path System

This is a very old form. In this system the streets curve and wind all around. At first it wasn't really planned at all. Early settlers of an area-particularly if it was hilly-noticed that the paths the animals had made usually followed the easiest routes, so they just followed them too. It is easiest to get up a hill if you wind back and forth across it, so that is the way hillsides are usually developed.

However, sometimes the system is used on level ground. It makes a pleasant neighborhood layout with winding streets and lots of different shapes where houses can be located that have different outlooks.

Grid System

This is the one that is seen most often in the central areas of towns and cities.

Much of the foundation of our country is built on the democratic principles and philosophies of the Ancient Greeks. It is natural that the founders of our country also adapted a Greek city planning form-the grid system. It is a very orderly and efficient system. It is easy to find your way around and you are not likely to get lost. Traffic moves through it very easily.

Portland started out with a grid that ran along the river. They had a little problem when they turned, so they turned the grid and it worked out quite well.

Radial System

This is a carefully planned system, which has large circles every so often along long, wide boulevards. Smaller streets radiate out from the circle streets like the spokes of a wheel. Semi-circular streets connect the spokes.

Paris, France is a beautiful city, much of which is laid out using the radial system. In the large circle areas they have placed arches, monuments or landscaping and long rows of trees run down center strips of the boulevards. The system allows for long views of the circles and provides a spectacular route for parades.

When the United States decided to set aside an area called the District of Columbia to be the capitol of the country, they wanted to have a beautiful plan. They thought Paris was a good example, so they hired a French city planner.

NOTE: Allan Jacob's *Great Streets, Cambridge, Massachusetts,* The MIT Press, 1993 has great images to show students different cities' layouts by showing figure/ground drawings of cities and the street.





