

Edutopia PBL Graph

	Problem	Products/Performances	Tools & Technology	SME Assessment
ORAL HISTORY	How can we help preserve the stories of immigrants to this country?	Students, working primarily in pairs, collaborate with curators at a local Asian museum to collect (via interview) and record (via tape and written narrative) the stories of Chinese immigrants to the city.	<ul style="list-style-type: none"> • Tape recorders and/or video cameras • Digital cameras • Graphic design program • Maps of China (e.g., Google Earth) • Internet for research • (Mounting materials, etc., supplied by museum) 	Students help curators prepare a public exhibit of photographs, artifacts, and wall text featuring several of the interviewed subjects. Student work must meet museum standards for oral history and attractive display.
WING DESIGN	How can we design the strongest and lightest possible airplane wing using papier-mâché?	Students, working in teams of three, design and construct a wing and conduct a stress test by suspending increasing amounts of water from the wing until it breaks; they then redesign the wing on the basis of test results two more times.	<ul style="list-style-type: none"> • 3-D graphics program (shareware) • Spreadsheet program • Graphing calculators • Wing-test device (wooden structure) 	Students defend their products to structural engineers, answering questions about their decision-making process. They take a field trip to a local airplane manufacturer to observe the actual process.
PICTURE BOOKS	How can we teach young children about a nonfiction topic in a picture-book format they enjoy having read to them?	Students, working solo or in writer/illustrator pairs, research and produce a picture book manuscript (32-page maximum) in the rising-demand genre of children's nonfiction (e.g., biography, historical event, how-to, culture/tradition, science).	<ul style="list-style-type: none"> • Internet for subject/topic research • Digital cameras • Desktop-publishing program(s) • Access to published books in this genre 	Students read their manuscripts to the target audience, making revisions based on responses. Local children's authors, role-playing as publishers, review/edit students' manuscripts and send acceptance or rejection letters with ideas for revision; students are encouraged to rework manuscripts and submit them for publication.

TRANSIT DILEMMA	How can commuters be better served and traffic congestion eased in a particular traffic corridor of our city?	Students, working in small groups and as a whole class, take a field trip and use current census and commuter data to determine the best transit routes and the best locations for transit stops. They produce a map showing current and proposed new routes and stops and the type of transit (bus, light rail, subway, etc.) best suited to given corridors, justifying how data was used to make decisions.	<ul style="list-style-type: none"> • Databases (most online) • Spreadsheet program • Maps of city • Current transit maps • Digital cameras • Multimedia software 	A peer-selected group of students presents the class's best ideas to city council members. Presentation includes a map, a photographic tour of proposed routes and stops, and a handout showing how the data was used to inform decision making. All students attend the presentation and help answer council members' questions.
MUSEUM DESIGN	How can we design a facility to best showcase selected artifacts that attracts viewers?	Students, working in groups of two or three, choose the type of museum they want (e.g., glass art, antique cars, kites, a hall of fame) and design a facility to house a permanent exhibit. They must make a scale model, estimate the cost, and write a proposal.	<ul style="list-style-type: none"> • Internet for research • 3-D graphics program (shareware) • Spreadsheet program • Glue guns and other tools for model construction 	Students take a field trip to a local museum and interview curators. They present their final design to architects, who evaluate their work on layout, circulation routes, the form/function relationship, etc.
RIVER CLEANUP	How can we raise public awareness of the levels and causes of toxic pollution in our river and help with the cleanup effort?	<p>Students, working solo, in pairs, or in groups, respond in self-determined ways. Examples:</p> <ul style="list-style-type: none"> • Write and perform a play to audiences ranging from elementary school students to local politicians. • Produce and sell bracelets. • Film a public-service announcement. • Help a local organization create floating artwork. • Help revitalize the shoreline (plant shrubs, clean debris). 	<ul style="list-style-type: none"> • Costume and props construction tools • Film/video camera • Shovels • Artwork materials supplied by sponsor 	Students present a play to a real audience for real responses; they succeed or fail at marketing and selling their products (learning from the failures); they work side by side with adult volunteers and as participants in grassroots organizations.