



ACED

Festival

Architecture, Construction,
Engineering + Design



Stockton ACED Festival



Stockton ACED Festival



ACED Festival



ACED Festival



@ACEDfest & enter the photo competition #BuildMy209



CURRICULUM



Architecture, Construction,
Engineering + Design

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FRI 2

► Student Events

*8am to 3 pm

GRADES

K-2	Shape Walk Paper House Paper Airplanes
3-5	New Stockton Box City Geo-Dome Shake Table Tower
6-8	Miracle Mile Tour Egg Box Launch ACED Talk
9-12	Hard Hat & Downtown Tour "If You Build IT" Film Robotics Navigation Waterfront Survey

► Design Awards Gala

Cocktail Hour 5:30pm

Presentaion 6:30pm

Location: **UOP De Rosa Center**
3601 Pacific Avenue, Stockton CA

[Refreshments](#) | [Key Note Speaker](#) | [Awards](#)

Student Admission **FREE**

Public Admission **\$5**

SAT 3

► "If You Build IT" Film

Reception 5:30 pm

Feature Film 6:30 pm

Location: **West Forum, Delta College**
5151 Pacific Avenue, Stockton, CA

[Presentation](#) | [Activities](#) | [Refreshments](#)

Admission **FREE**

In Collaboration with Stockton Unified School District, Lincoln Unified School District, San Joaquin County Office of Education, and San Joaquin Delta Community College, AIA Sierra Valley and numerous local Businesses and Organizations: Students, grades K-12, will have opportunities to explore ideas of design, architecture, engineering, and construction through a range of hands-on activities, tours, and lectures. Each activity is catered to fit the students' grade levels and interest in specific topics as well as allowing individuals to explore their imagination and creativity to create and think innovatively. The futures of architecture, construction, engineering and design lie in the minds of young students that can bring fresh and cutting edge ideas to the world. Not only will students learn the tools to design their own futures, but also the tools to build the futures of the design world.

Enjoy a special evening celebrating design excellence! Learn about the award-winning projects from the architects who designed them. From architecture and construction, to engineering and design, these projects have truly ACED all aspects of their work. Event includes drinks, appetizers, and abundant sources of inspiration!

Directed by Patrick Creadon, IF YOU BUILD IT follows designer-activists Emily Pilloton and Matthew Miller to the rural and poorest county in North Carolina: Bertie County. Here they lead 10 students to transform their community through a year-long, full scale design and build project while fighting the struggles of the change-resistant school board. IF YOU BUILD IT offers a compelling and hopeful vision for a new kind of classroom in which students learn the tools to design their own futures.

ACED

Festival 2015

Architecture, Construction,
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INTRODUCTION

Everything in the built environment is the result of solving problems to help people live, work, grow, learn, and travel. These solutions or projects are designed and constructed by a team. Each team member brings special skills to assist in solving problems. The architects, engineers and designers work together to design the solution and to develop the drawings and specifications used by the contractor to construct the project, whether it is a park, a home, an office building, or a school.

The lessons in this packet expose your students to the fun and wonders of architecture, construction, engineering, and design. They will be using their imagination, senses, and hands to explore the built environment and the community, to solve problems and to learn concepts that are the building blocks integral to the disciplines of architecture, construction, engineering, and design.

LDA Partners
DESIGNERS & ARCHITECTS

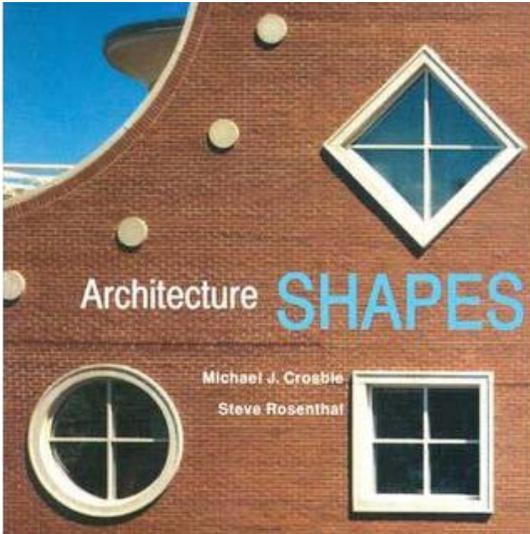


ARCHITECHNICA



SHAPE WALK

K-2



Goals

- △ To learn about basic geometric shapes
- △ See shapes in everyday environments

Supplies

- △ Paper
- △ Scissors
- △ Glue

Activity

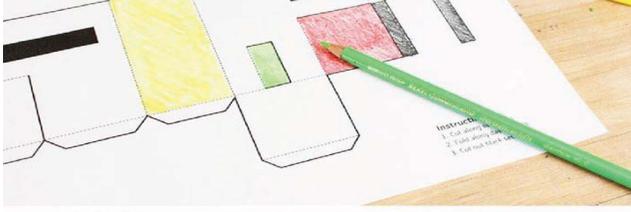
Give students a variety of shapes on different colored construction paper or ask that they cut the shapes out of the paper. Name all of the shapes and turn the shapes in different directions so that the students can recognize the shapes in different orientations. Walk through the school or better yet, through a neighborhood. Show the students how the shapes make up parts of the buildings, playground features, houses, cars etc. Then let the students find and point out shapes in their environment.

Extensions

Using the shapes the students cut, arrange and glue shapes on a sheet of paper into something they saw on the "shape walk" (e.g. car, house, playground equipment)

PAPER HOUSE

K-2

**Goals**

- △ Use a 2D material to build a 3D structure

Supplies

- △ House & Castel templates are provided in the Handout section of the Curriculum Packet
- △ Paper (house templates)
- △ Scissors
- △ Glue/Tape
- △ Color pencils or crayons

Activity

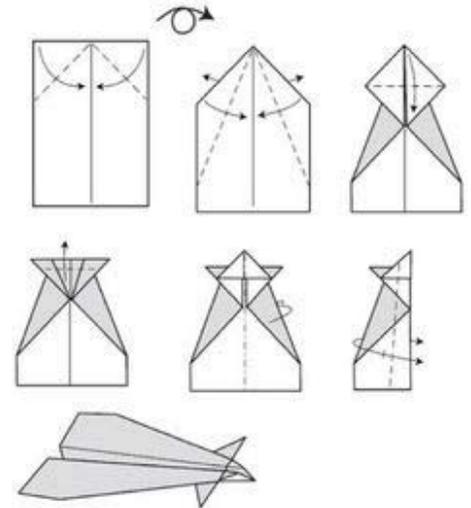
Using a single sheet of square paper, students can create a small paper house to decorate. Discussion can center around window or door features normal incorporated, roof design, building materials, etc. Using construction paper, students will explore and recreate the design features specific to castles and consider other architectural examples with specific functions.

Extensions

- △ Add 2D or 3D features to the house with paper shapes.
- △ Create a building without using a template.

PAPER AIRPLANES

K-2



Goals

- △ To explain aero engineering concepts and how altering the shape of a paper airplane changes its performance.
- △ To allow self-guided exploration of creation and engineering

Supplies

- △ Airplane templates are provided in the Handout section of the Curriculum Packet
- △ Paper

Activity

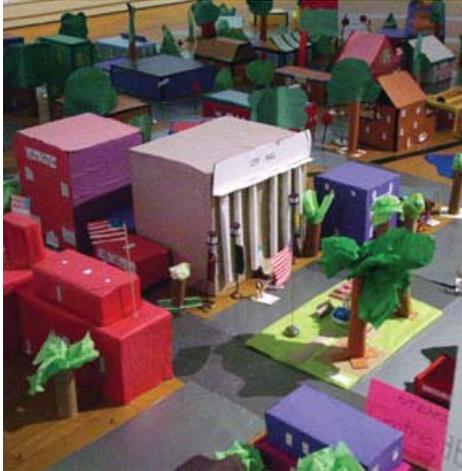
To begin, some basic scientific principles will be introduced including: Airplane Forces (which describes what pulls planes in different directions) and Bernoulli's Principle. Using sheets of paper, students are then able to re-create different given paper airplane designs. Each time testing and observing how each of the different designs affects the paper plane's flight.

Extensions

Repeat the exercise, but challenge the students to alter one of the learned paper airplane designs in order to compete in order to span a certain distance, or pass through a certain obstacle.

NEW STOCKTONBOX CITY

3-5



Goals

- △ To work in teams to create a spontaneous city from recyclable materials.
- △ To analyze the city and reconstruct in a more conscious and deliberate way.

Supplies

- △ Downtown Grid (using chalk or colored tape)
- △ Variety of building materials (plastic, cardboard, tubes, egg cartons, paper)
- △ Tape and Glue
- △ Scissors

Activity

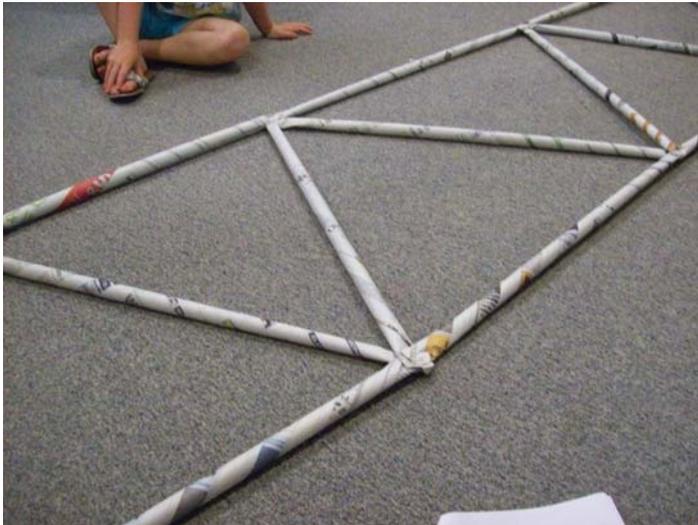
Using a city downtown grid mapped out on the floor, give the students a task to re-build the City of Stockton. Ask them what places they should have in Downtown Stockton and where they would like that place to be. Each team of students can gather the "building supplies" they will need to create a building. Then each team places their model in the "box city". Each team can present their building; what kind of building it is, it's features, why they built it, why they placed it in a particular location etc.

Extensions

Add other features (e.g. landscape elements, transportation, etc)

GEO DOME

3-5



Goals

△ To demonstrate the structural strength of the triangle, and how structures created from a combination of triangles can be self-supporting, and strong!

△ To show how the triangle can be put together to create both 2 dimensional shapes (hexagons, squares, etc) or jointed together to create 3 dimensional spaces.

Supplies

△ Geodesic dome instructions are provided in the Handout section of the Curriculum Packet

△ Newspaper

△ Tape, stapler

Activity

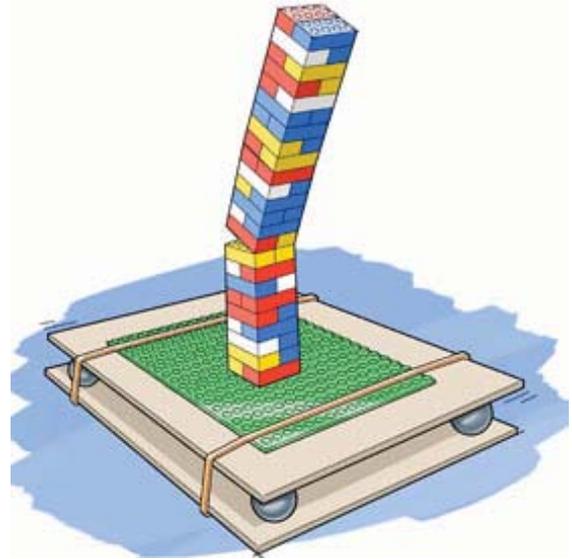
In groups, roll newspaper into tubes, decorate them, and assemble the tubes into a tessellated dome. Use plenty of tape or staples to reinforce the joints of where the tubes connect to each other. After completing the dome, test the self-supporting structure under additional weight by adding magazines to the top of the dome. Triangles are a shape that can be tessellated, or arranged to form a tiling pattern. Have students predict what other shapes can be tessellated (hexagons, squares). Cut the shapes out of paper and test their predictions.

Extensions

Add tension rings around the bottom of the dome or divide some or all of the triangular panels into smaller triangles.

SHAKE TABLE TOWER

3-5



Goals

- △ To understand how materials and form give structure strength.
- △ Learn about forces released in an earthquake and how buildings resist these forces

Supplies

- △ Shake Table instructions are provided in the Handout section of the Curriculum Packet
- △ Shake Table: 2 boards, several rubber balls, 2 rubber bands
- △ Towers: wood sticks, tape, marshmallows

Activity

Create a shake plate for testing the stability of skyscrapers. Students can compare the difference between towers of differing heights and base size and discuss other ideas to improve building stability students then build towers out of toothpicks and mini-marshmallows. Place them on the shake table and see how they endure the shaking, to simulate the effect of earthquakes on towers and built structures.

Extensions

See what team can build the tallest & strongest structure

MIRACLE MILE TOUR

6-8



Goals

- △ Learn about history of Stockton and Architecture throughout buildings
- △ Learn about architectural features and what they signify

Supplies

- △ Tour Route and Architectural Features/Style guide is provided in the Handout section of the Curriculum Packet
- △ Pencil or Pen

Activity

Groups of students will be guided on a walking tour of Tuxedo Park neighborhood. The guides will illustrate the architecture of the homes; discussing the styles that the buildings represent, the time period they were built, features that are common or specific between certain buildings and styles.

Extensions

Have each student sketch a memorable or favorite architectural feature

EGG BOX LAUNCH

6-8



Goals

- △ To design a structure that will protect a raw egg from breaking when launched
- △ To understand the relationship between physics and structure

Supplies

- △ Container: cardboard, newspaper, styrofoam, cotton, feathers, cloth, bubble wrap etc.
- △ Glue, tape, rubber bands, scissors
- △ Eggs

Activity

Build a "container" using provided materials. The overall size of the structure is not to exceed 6"x6"x12". When students are ready, seal and raw egg inside a small plastic bag and place inside the structure. One by one launch the containers at the designated location. After each is launched check to see which eggs survive the launch. Discuss and compare the successful designs (materials, shapes, design, and protective environments for the egg).

Extensions

- △ Do a 2nd launch of the surviving eggs containers!
- △ Translate the discussion about the egg containers protective environment to observations about protective environments for humans (buildings, cars etc)

ACED TALKS



Goals

- △ Learn about exciting careers in Architecture, Construction, Engineering and Design.
- △ Opportunities for students to ask questions to experts in the field.

Activity

A panel of experts in the areas of Engineering and Design will provide insight about their educational backgrounds and highlights of their professional careers, Teachers and students will have opportunities to ask questions following each talk.

Extensions

Have students do a research and presentation project about an ACED career of their choice.

HARD HAT TOUR

9-12



Goals

△ To give students an inside look at construction methods, the structural engineering of a building

△ To explore the roles of individuals of the design team, Engineers, Inspectors, Trades, Project manager, Forman etc.

Supplies

△ NONE

Activity

An up close tour of the construction site of the new Stockton Courthouse hosted by Turner Construction. Groups of students will be taken into the current and undergoing construction site of the new courthouse with a guide. The guide will discuss building construction methods, structural design, and the importance of incorporation of different types of design and engineering to complete a building. Students will be able to see the progression of construction for a structure and see how all people on a construction site engage with each other and the project on a daily basis.

Extensions

Sketch or photograph an interesting feature of the building. Share on #BuildMy209

DOWNTOWN TOUR

9-12



Goals

△ Learn about Stockton's history through notable downtown buildings and features

Supplies

△ Tour Route and Guide is provided in the Handout section of the Curriculum Packet

Activity

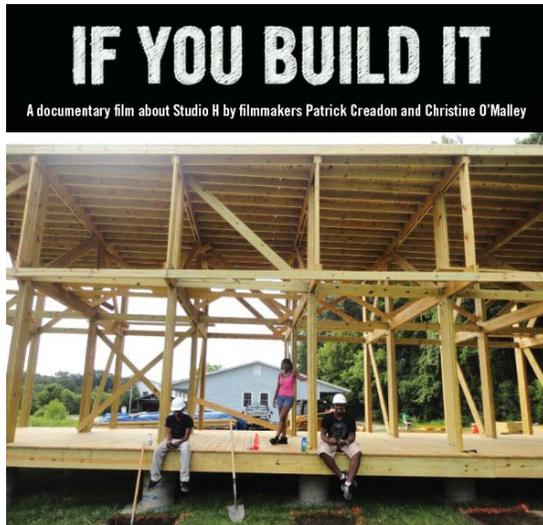
A guided tour of buildings, history and architecture of Stockton's skyline. The guides will illustrate the architecture of the buildings, and high rises in the Downtown area; discussing the styles that the buildings represent, the time period they were built, features that are common or specific between certain buildings and styles. Students will learn about the importance of the areas construction to the overall growth and development of the City of Stockton.

Extensions

Sketch or photograph and interesting feature. Share on #BuildMy209

"IF YOU BUILD IT" FILM

9-12



Goals

△ To gain inspiration from teenagers, that with the help from dedicated teachers, it is possible to transform yourself and your community through Architecture, Construction, Engineering, and Design.

Activity

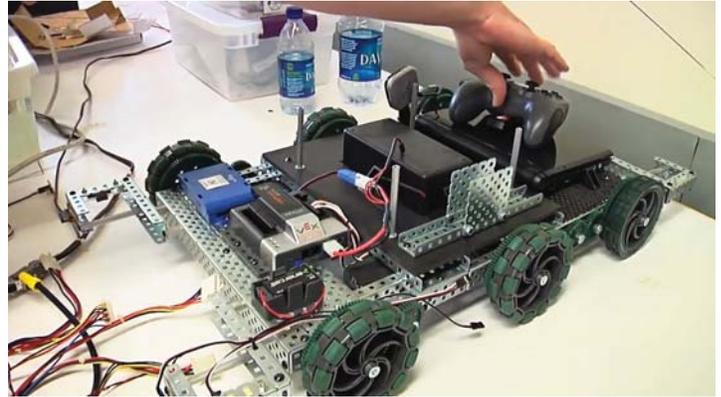
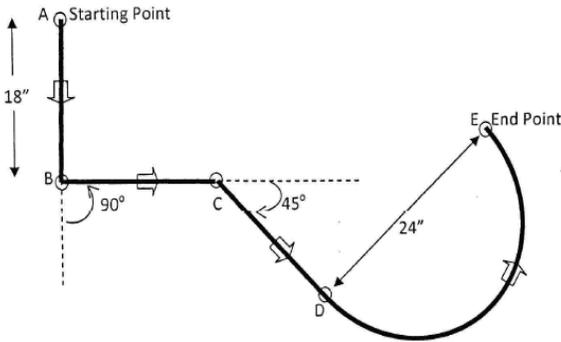
A film about an architecture education program at a high school in a struggling rural community and the lives this program has impacted and transformed.

Extensions

Discuss what problems exist in your community and how they can be solved through Architecture.

ROBOTICS NAVIGATION

9-12



Goals

- △ To design, build, and program a robot to navigate a fixed course.
- △ To apply practical math and scientific concepts while learning design, mechanical construction, and computer programming.

Supplies

- △ Fixed course, scoring rubric and table is provided in the Handout section of the Curriculum Packet
- △ Students must bring their own robots

Activity

The students' task is to program an autonomous mobile robot of their choice to navigate a determined fixed course. Students may participate individually or in groups of two. The robot must be brought to the competition and it must navigate the entire course independently without being remotely controlled. It is recommended that it is programmed before the competition and only small modifications to be made on the day of competition. Each linear line segment is 18" (1.5 ft) long. The semi-circle has a diameter of 24" (2 ft). The course will be taped on the hallway floor at the competition area; however, you **MUST** bring your own robot and a laptop if you wish to modify your code on the competition day. Each robot will be given an official score based on accuracy of the requirements given by the course. Practice runs are given within a 60 min time period, and the students are allowed two official runs, with the higher of the two your official score.

WATERFRONT SURVEY

9-12



Goals

- △ To learn basic surveying techniques
- △ Use total stations to survey a given area

Supplies

- △ Total Station (will be provided)

Activity

A crash course in surveying hosted by San Joaquin Delta College in the downtown area. Surveying is the first step in the construction phase of any project. You have to lay it out right, or it's ALL wrong. The instructor will discuss surveying techniques and equipment and the importance of a good survey. Students will apply their knowledge by using total stations to measure angles and distances.

Extensions

- △ Use a tape to measure a property boundary or other desired distances
- △ To calculate angles, measure distances of the sides of triangles then calculate interior angles



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ACEDFEST

SNAP TO WIN

1. FOLLOW **ACEDFEST** ON INSTAGRAM
2. TAKE A PHOTO OF THE BUILT ENVIRONMENT AND UPLOAD TO INSTAGRAM WITH THE HASHTAG :
#BuildMy209
3. PHOTO WITH THE MOST LIKES WILL WIN GRAND PRIZE
4. TOP 3 PHOTOS JUDGED BY PANEL WIN PRIZES

CELEBRATE **THE BUILT ENVIRONMENT** AND ITS IMPORTANCE, MEANING, OR INSPIRATION TO OUR COMMUNITY.
BE CREATIVE. BE INSPIRATIONAL.

ACTIVITIES & LOCATION		TIME					
		ARRIVE 8:30	8:30-10:00	10:00-11:30	11:30-12:30	12:30-2:00	DEPART 2:00
9-12	COURTHOUSE HARD HAT TOUR STOCKTON COURTHOUSE & DOWNTOWN STOCKTON TOUR DOWNTOWN STOCKTON		A	B	LUNCH	C	
	"IF YOU BUID IT" FILM WEBER		B	C		ROBOTICS COMPETITION	A
	WATER FRONT SURVEY WEBER		C	A		B	



Please clearly letter or type all information

School Name:

Instructor:

Instructor mobile phone number:

Number of Participating Students:

Number of Chaperones, Teachers, Administrators etc:

TOTAL NUMBER OF PARTICIPANTS:

(add the total of students and other participants)

PARTICIPANTS OF ROBOTICS COMPETITION:

Names of Participating Students

First and Last Names

This event is available to the first 120 students to sign up-. Once the event is at capacity, a waitlist will be available. This entry form must be received by **4:00 PM on Friday, September 18**. Entry forms should be mailed or delivered to:

Ward H. Andrus, Ed.D.
Director, Ed. Services, Career and Technical Education
Stockton Unified School District
701 N. Madison St., Stockton, CA 95202
Phone: (209) 933-7115 ext. 2734
Email: wandrus@stocktonusd.net

All questions concerning registration, competition, or sponsorship opportunities, should be directed to Ward Andrus





ACTIVITY HANDOUTS

PAPER HOUSE

PAPER AIRPLANES

GEODESIC DOME INSTRUCTIONS

SHAKE TABLE INSTRUCTIONS

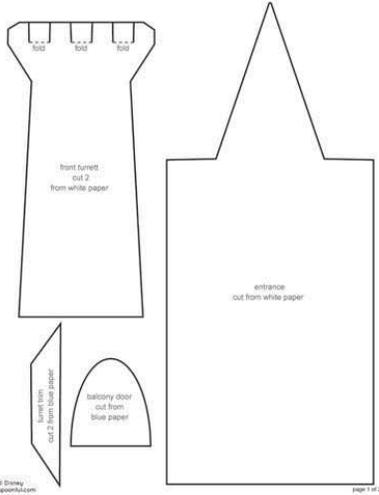
MIRACLE MILE TOUR ROUTE & GUIDE

DOWNTOWN TOUR ROUTE & GUIDE

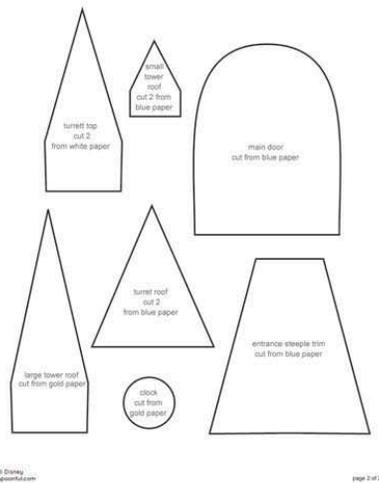
ROBOTICS COURSE AND SCORING RUBRIC AN TABLE



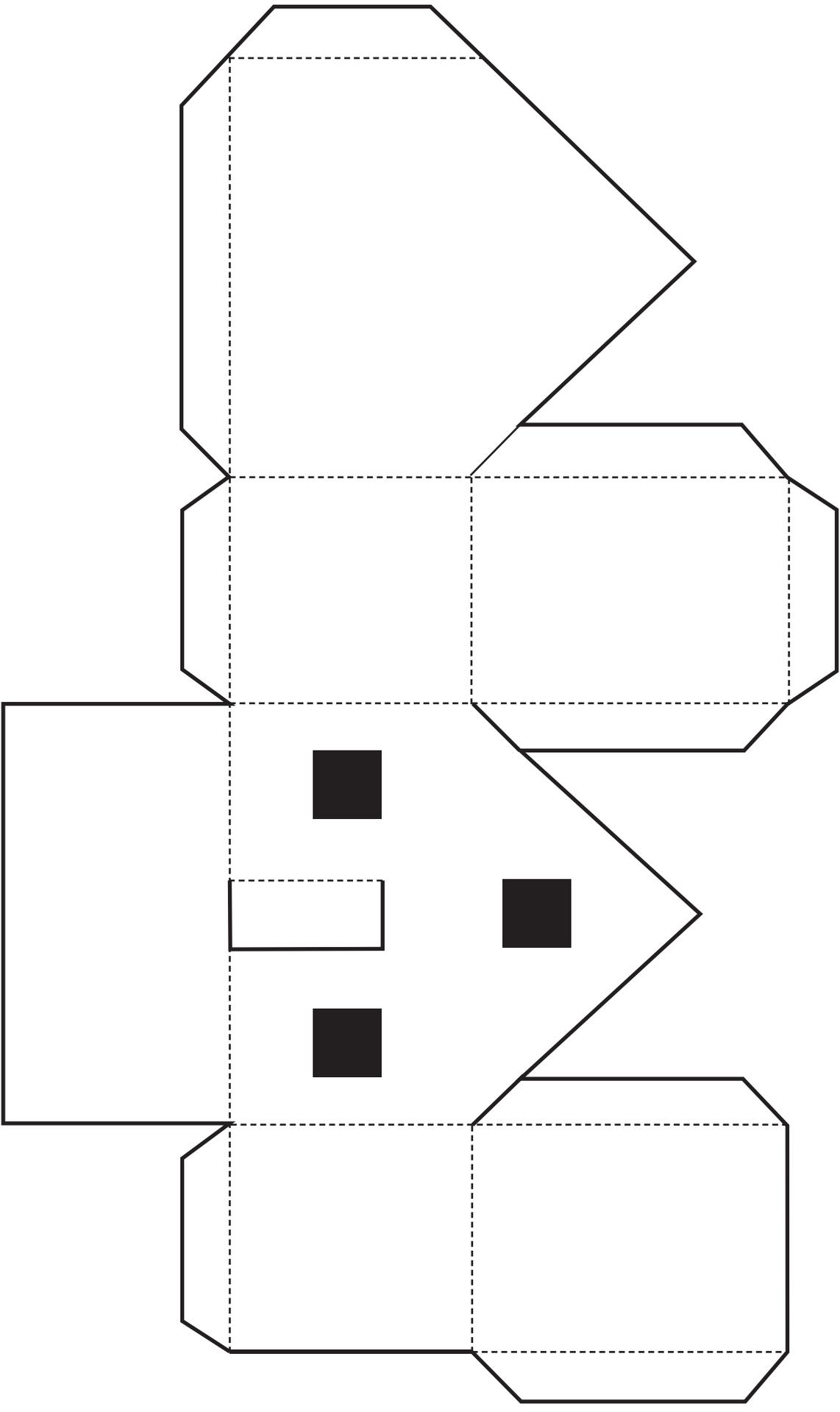
Cinderella Cinderella Dresser-top Castle Template



Cinderella Cinderella Dresser-top Castle Template

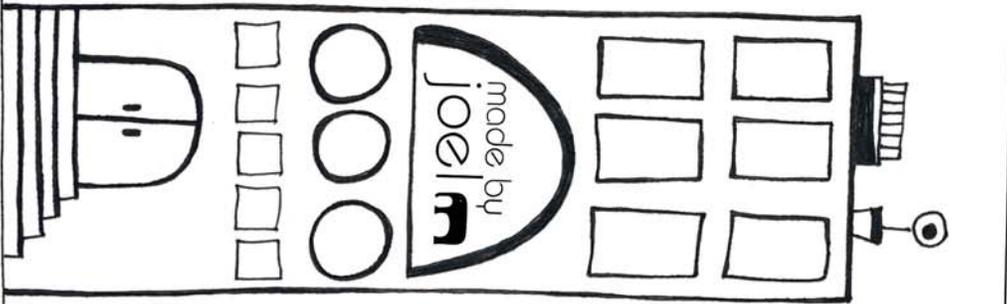
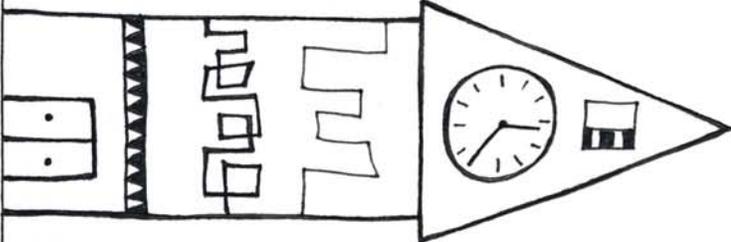
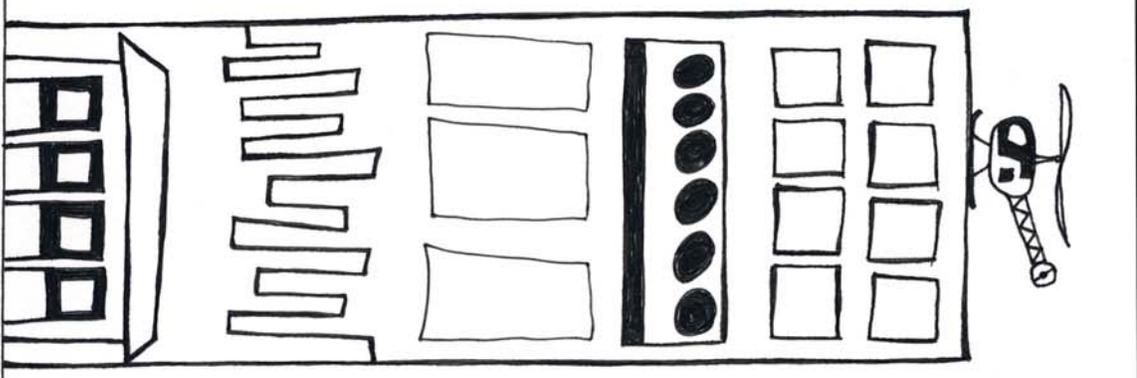
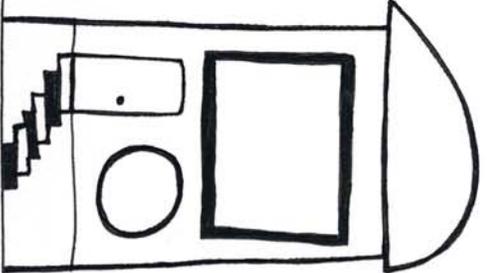
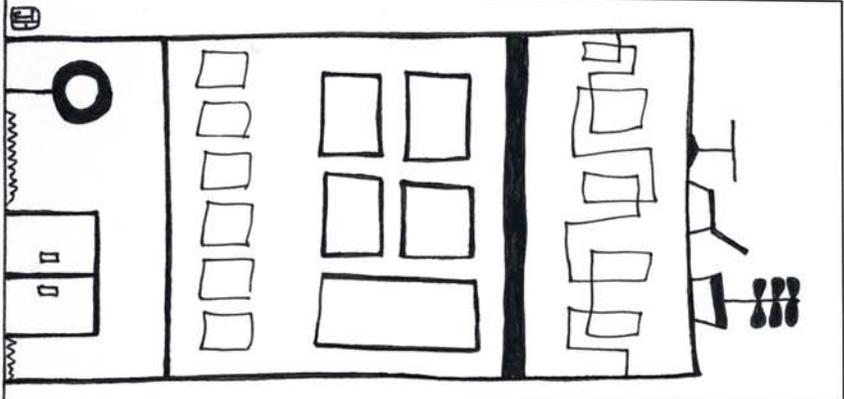


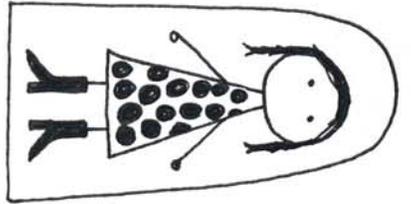
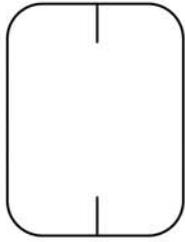
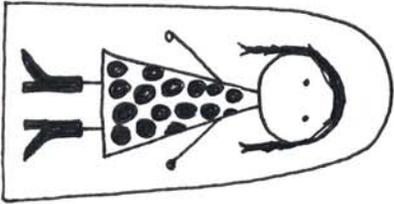
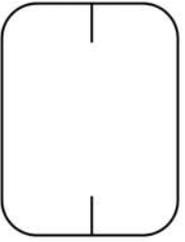
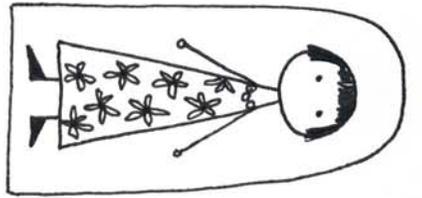
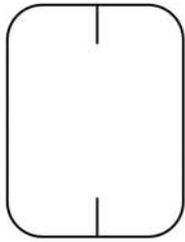
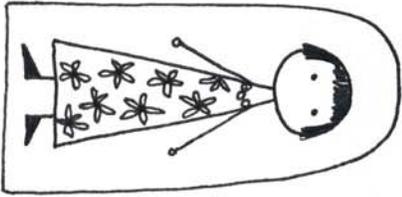
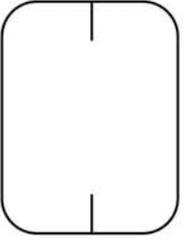
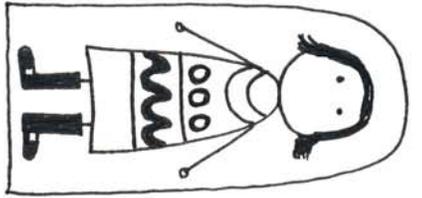
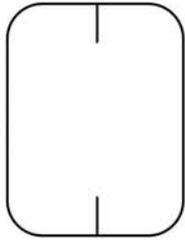
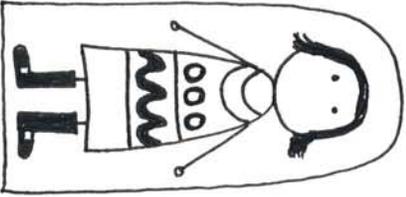
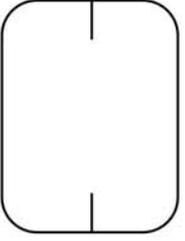
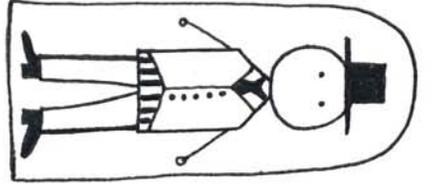
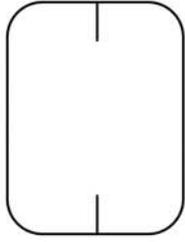
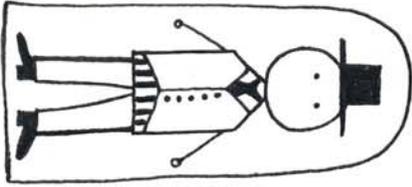
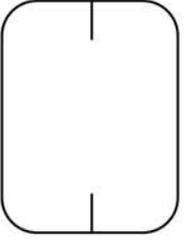
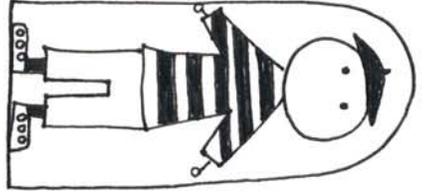
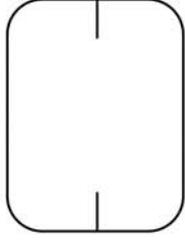
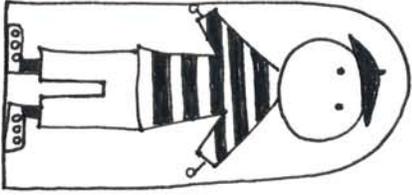
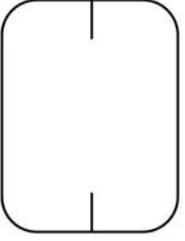
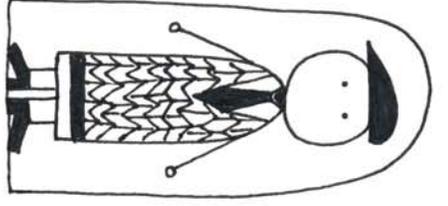
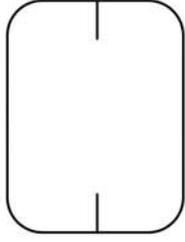
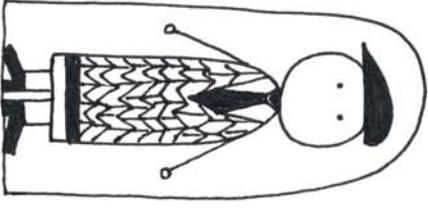
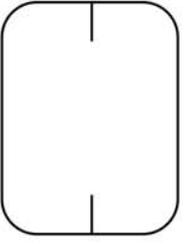
1-Story House

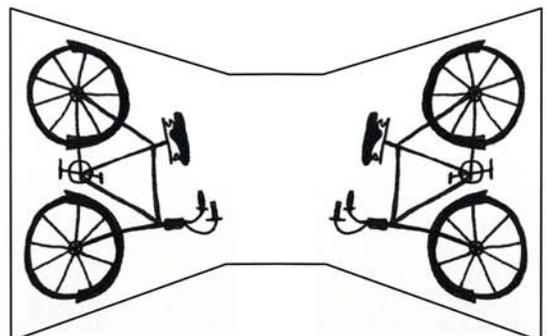
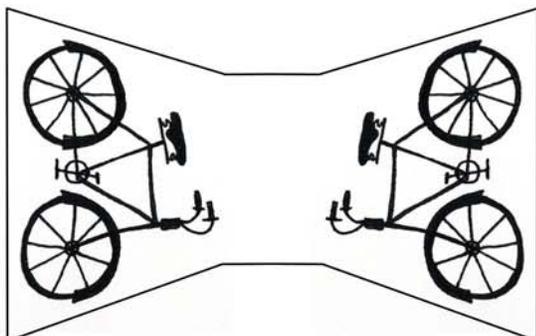
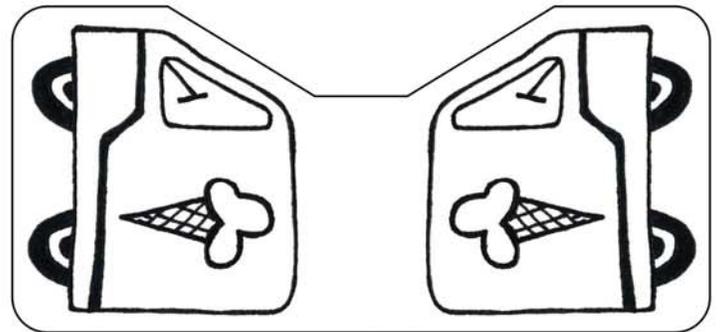
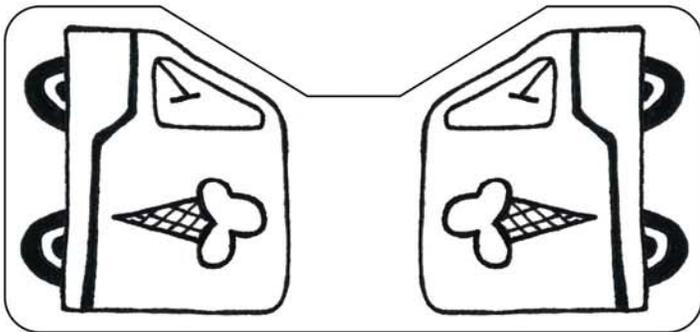
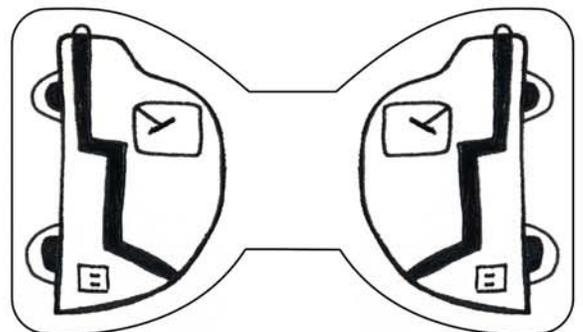
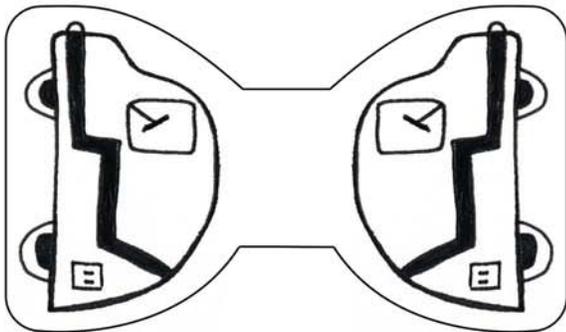
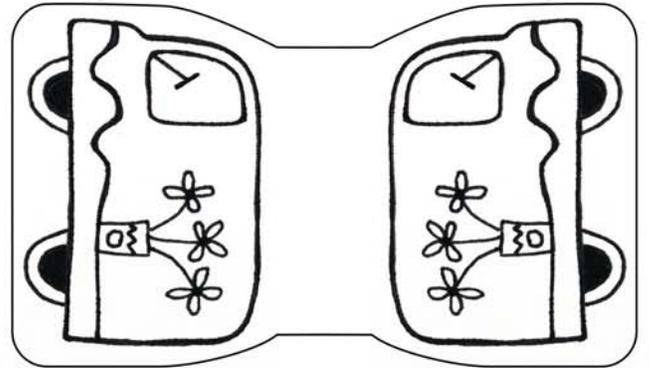
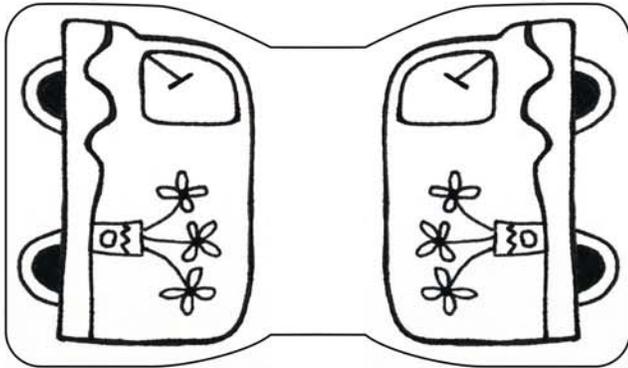
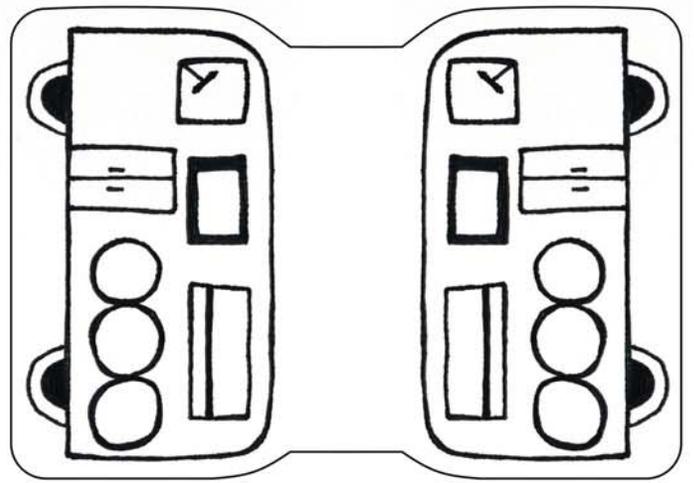
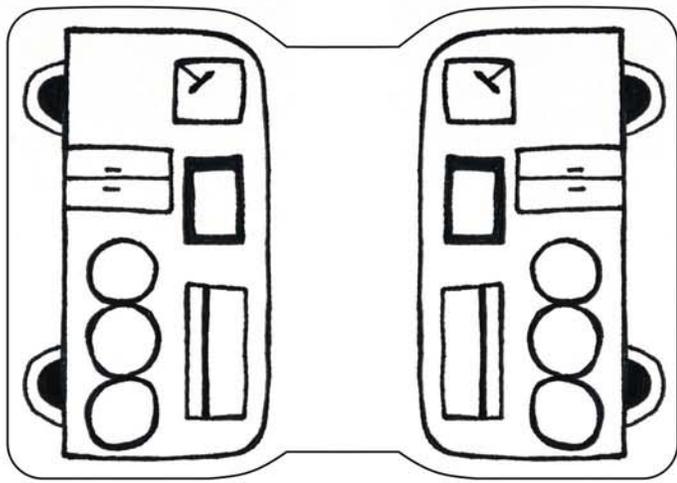


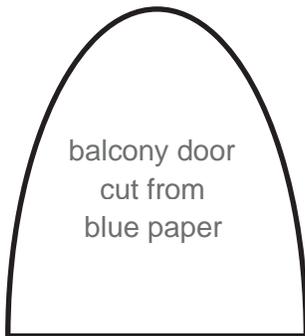
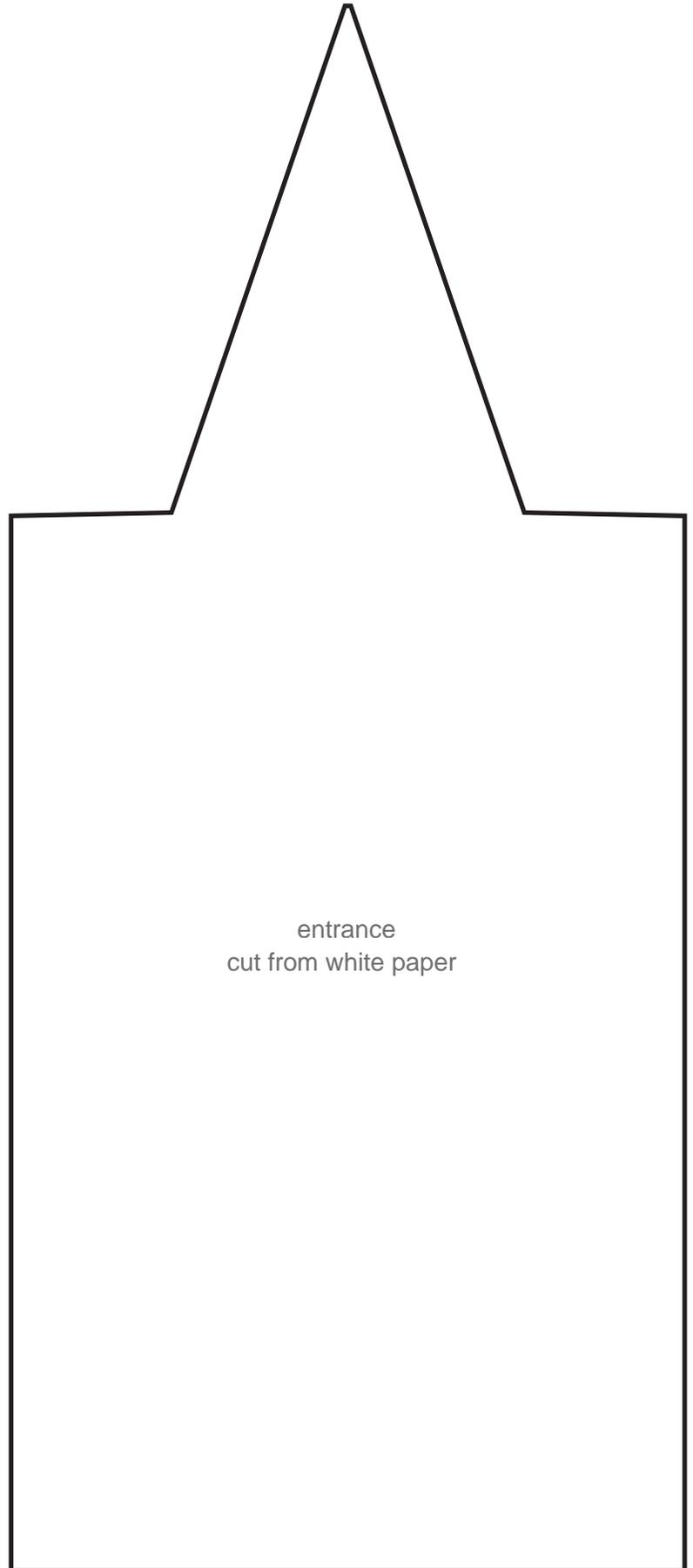
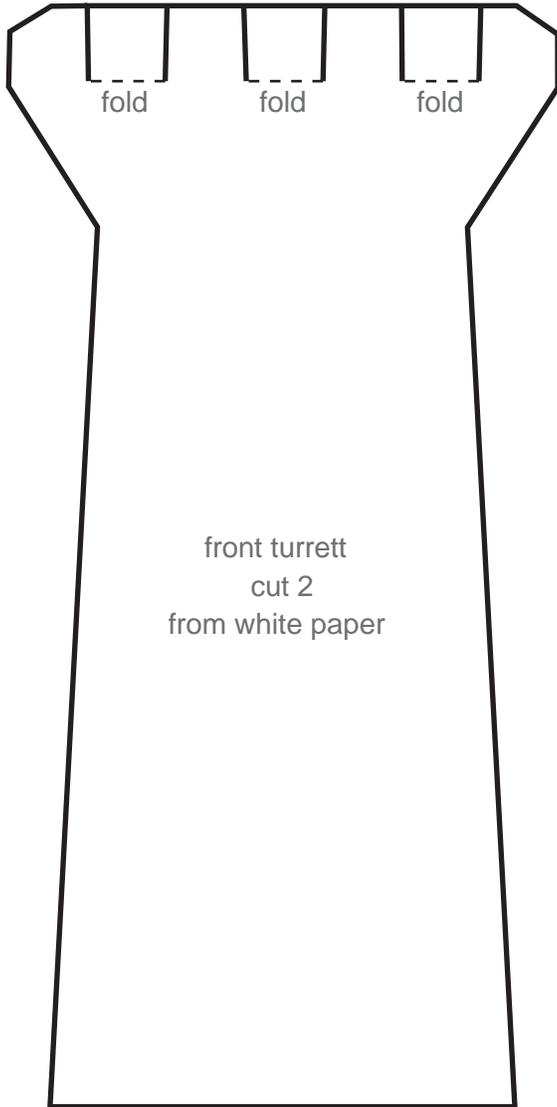
Instructions:

1. Cut along solid lines
2. Fold along dashed lines
3. Cut out black sections











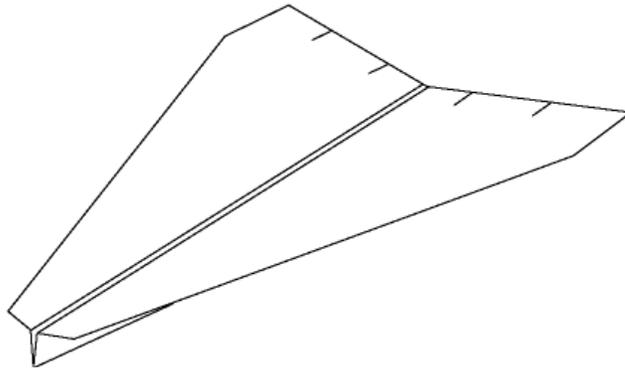
Paper Airplane Templates Included

- Arrow
- Classic Dart
- Condor
- Delta
- Dragonfly

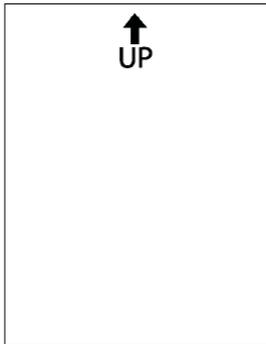
Additional templates can be found at
funpaperairplanes.com



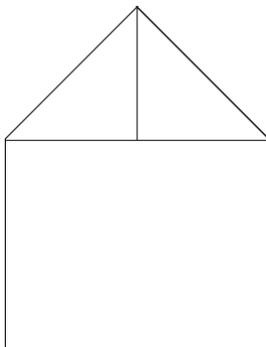
Arrow



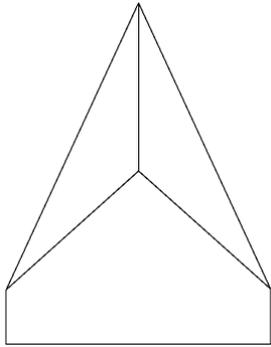
This plane is easy to fold and flies straight and smooth. Add a small amount of up elevator for long level flights.



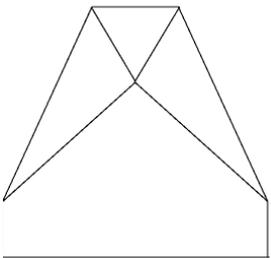
Orient the template with the “UP” arrow at the top of the page. Then, flip the paper over onto its backside, so that you cannot see any of the fold lines.



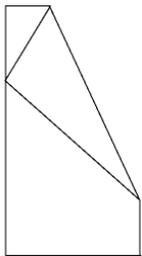
Pull the top right corner down toward you until fold line 1 is visible and crease along the dotted line. Repeat with the top left corner.



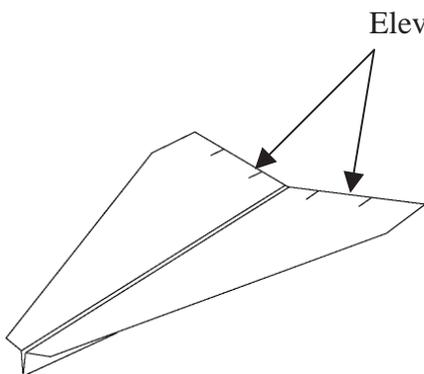
Fold the right side over again and crease along fold line 2.
Repeat with the left side.



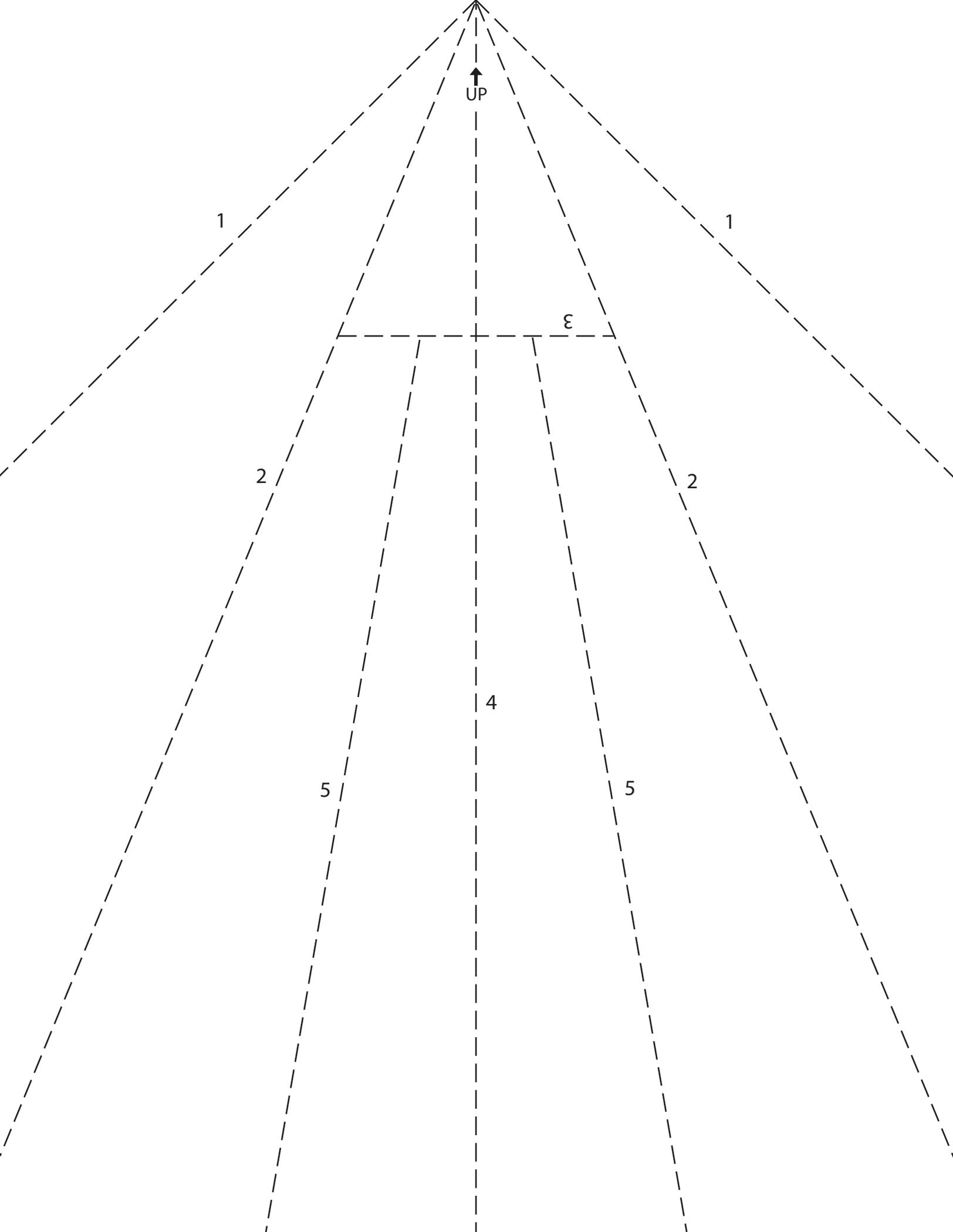
Fold the tip down toward you and crease along fold line 3.



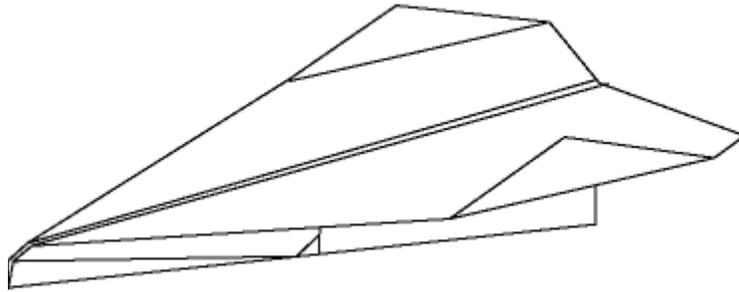
Now, flip the paper over. Then, fold the left side over onto the right side and crease along fold line 4 so that the outside edges of the wings line up.



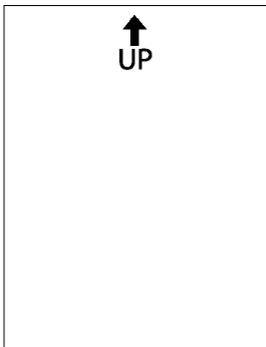
Fold the wings down along fold lines 5. Partially open the folds you just created so that the wings stick out straight. Cut two slits, one inch apart, along the back edge of each wing for elevator adjustments. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front. Read the Introduction for more information about dihedral. Now you are ready to fly!



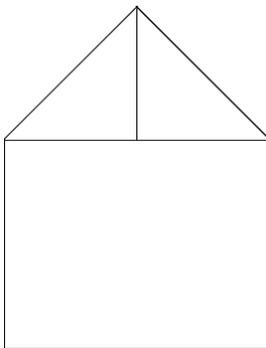
Classic Dart



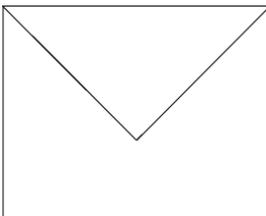
This plane is the classic schoolyard dart. It has short, compact wings and will fly straight as an arrow. It generally needs some up elevator along the back wing edges to fly properly.



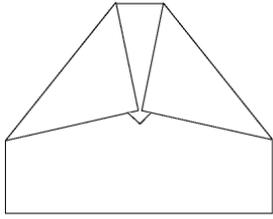
Orient the template with the “UP” arrow at the top of the page. Then, flip the paper over onto its backside, so that you cannot see any of the fold lines.



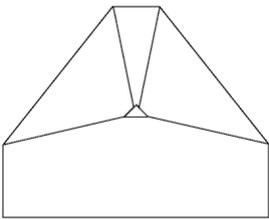
Pull the top right corner down toward you until fold line 1 is visible and crease along the dotted line. Repeat with the top left corner.



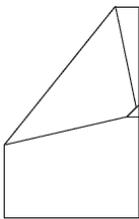
Fold the top point down toward you until fold line 2 is visible and crease along the dotted line.



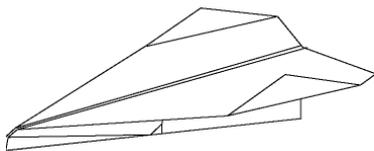
Fold the top left and top right corners down and toward you and crease along fold lines 3.



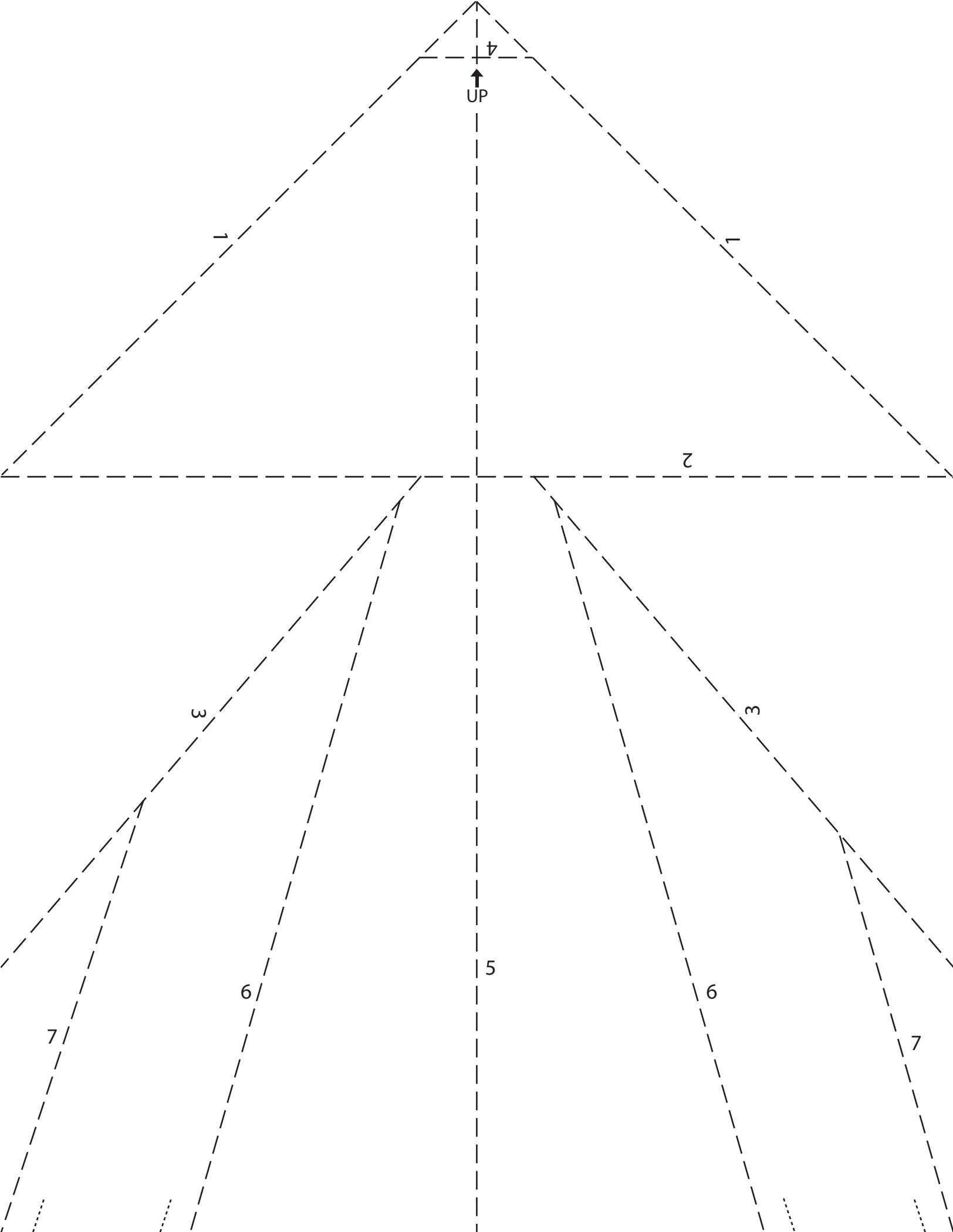
Fold the tip up and over the two diagonal folds along fold line 4 to secure them in place.



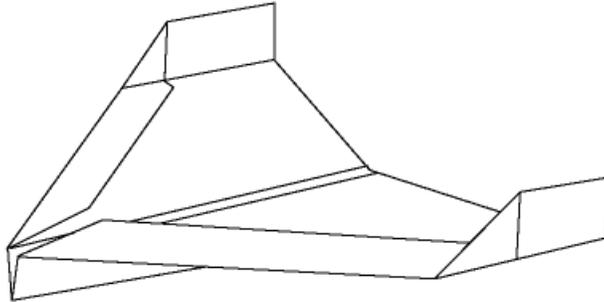
Flip the plane over and fold the right side over onto the left side as shown along fold line 5 so that the outside edges of the wings line up. Also make sure the diagonal folds do not become untucked from the tip you folded up in the previous step.



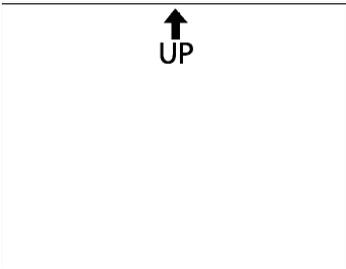
Fold the wings down along fold lines 6 and the winglets up along fold lines 7. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front. Cut two slits, one inch apart, along the back edge of each wing to make elevator adjustments. Start out by trying some up-elevator. You are ready to fly!



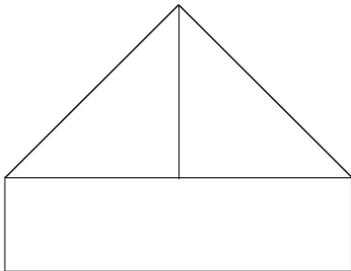
Condor



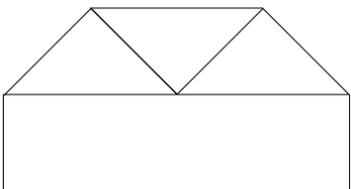
This plane produces tremendous lift at low speed, giving it a very low glide slope. It is an excellent indoor flier and will coast across the room on slow, smooth glides.



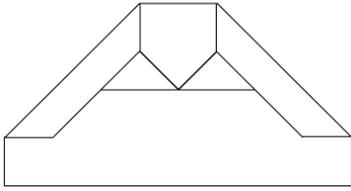
Orient the template so that the “UP” arrow is at the top of the page. Then flip the paper over so that none of the fold lines are showing.



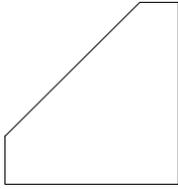
Fold the top left corner down toward you until fold line 1 becomes visible. Crease along the dotted line and repeat with the top right corner.



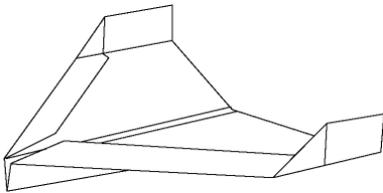
Fold the nose down until fold line 2 becomes visible and crease along the dotted line.



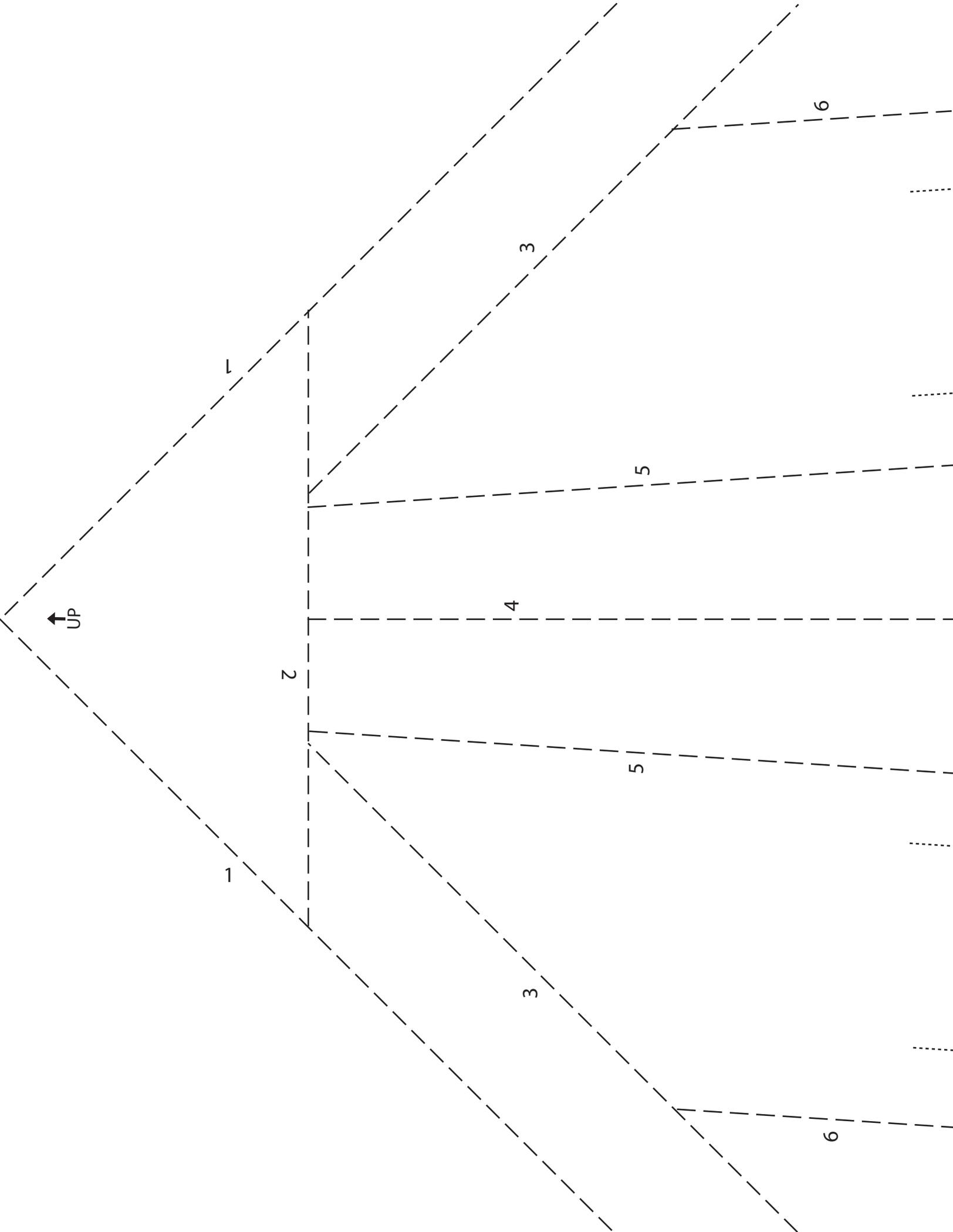
Fold the outside wing edges in and crease along fold lines 3.



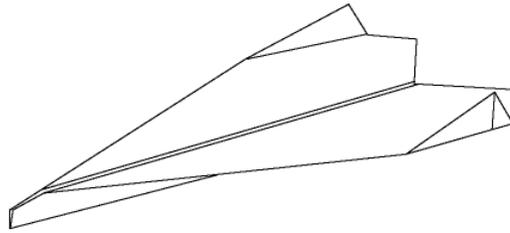
Fold the right half of the plane over the left half and crease along fold line 4 so that the outside edges of the wings line up.



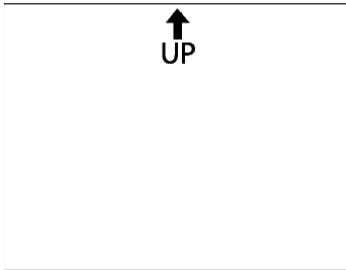
Fold the wings down along fold lines 5 and the winglets up along fold lines 6. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front. Add elevator slits along the back edge of the wings to adjust the flight if necessary. You are ready to fly!



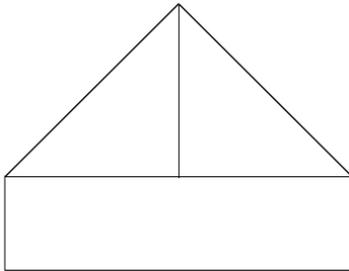
Delta



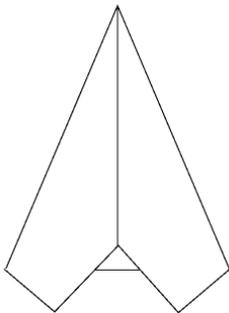
This plane flies fast and straight. It is easy to fold and a great all around flier. Add some up elevator if necessary to produce stable flights.



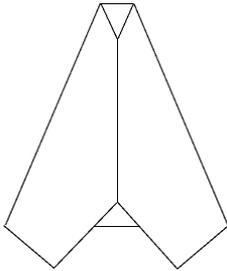
Orient the template so that the “UP” arrow is at the top of the page. Then flip the paper over so that none of the fold lines are showing.



Fold the top left corner down toward you until fold line 1 becomes visible. Crease along the dotted line and repeat with the top right corner.



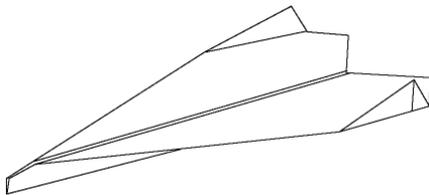
Fold the left side over again and crease along fold line 2. Repeat with the right side.



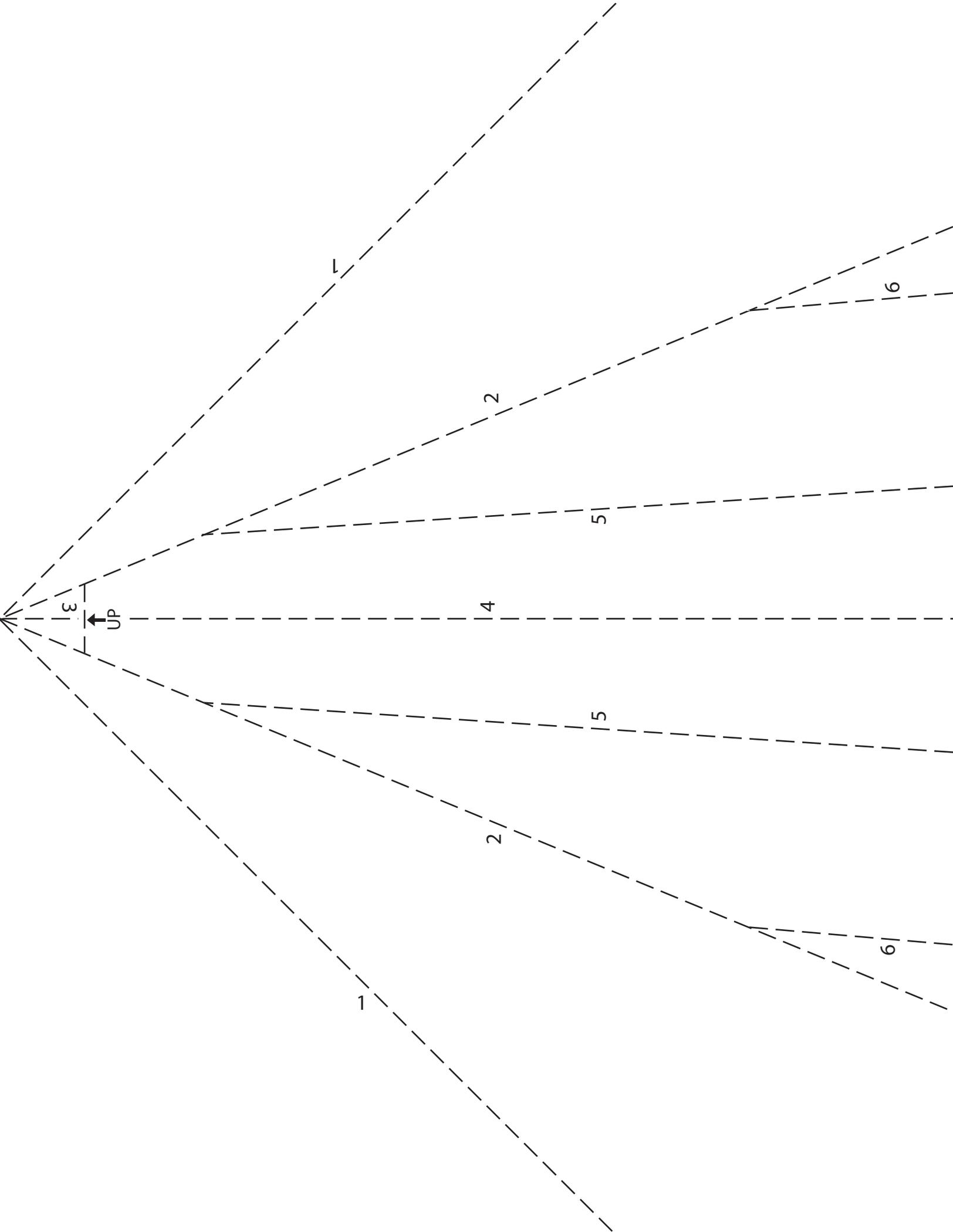
Fold the nose down and toward you along fold line 3.



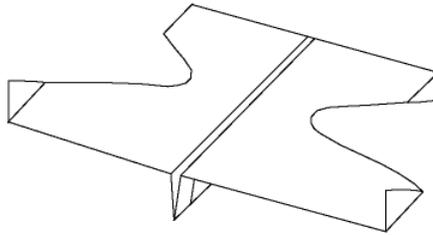
Fold the right half of the plane over the left half along fold line 4 so that the outside edges of the wings line up.



Fold the wings down along fold lines 5 and the winglets up along fold lines 6. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front. You are ready to fly!



Dragonfly



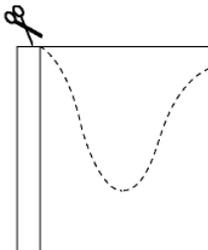
This unusual plane gets its name from its two sets of nearly symmetrical wings that resemble a dragonfly when viewed from the top. This plane is very aerobatic, and will tend to loop if thrown hard outdoors.



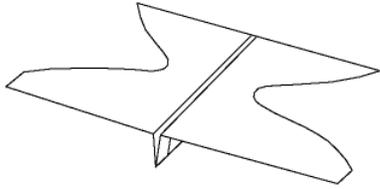
Begin by folding toward you along the first fold line. Continue folding this strip over itself until you reach the stop line. Make firm creases with each fold.



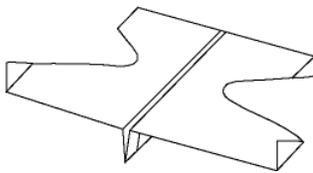
After you reach the stop line, flip your paper over and fold it in half fold line 2, so that the two flat sides of the paper are touching.



Cut along cut line 3 while keeping the paper folded tightly together to ensure that both wings match perfectly.



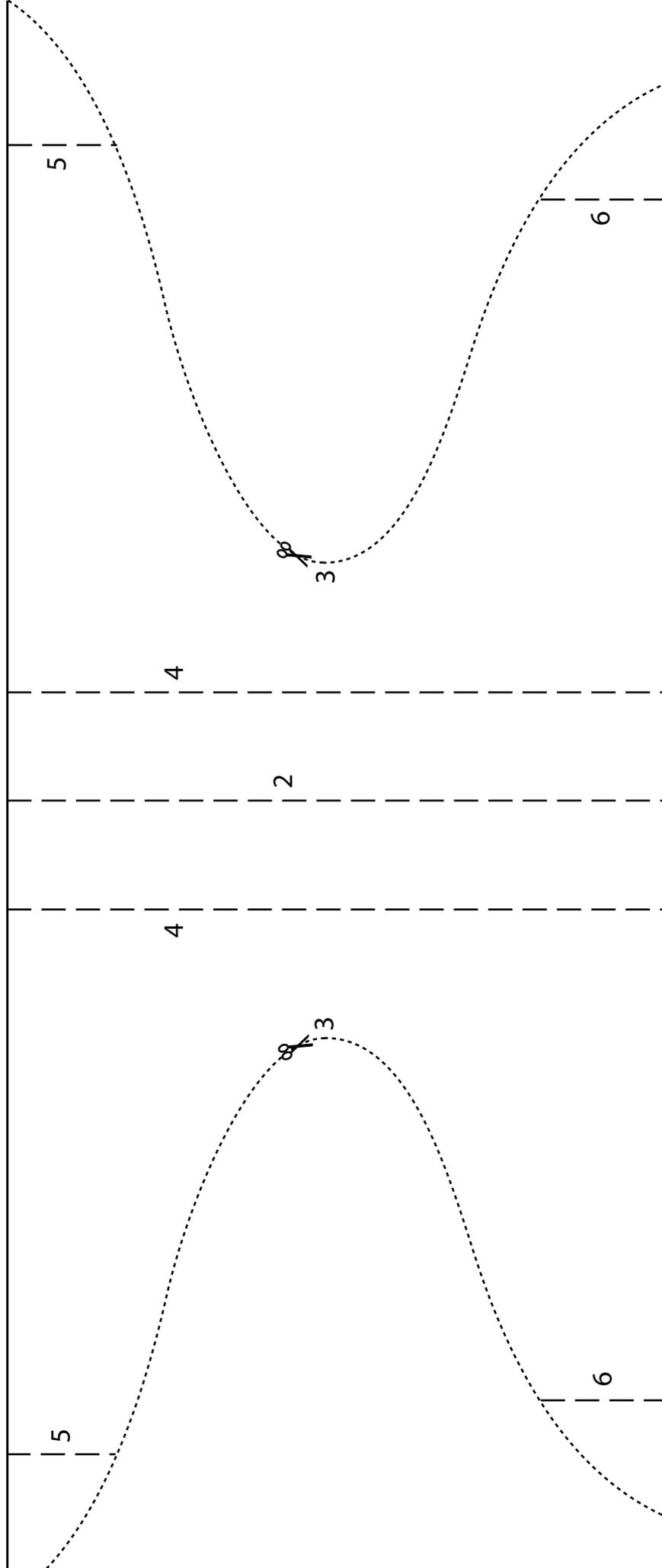
Fold the wings down along fold lines 4.



Fold the front winglets up along fold lines 5 and the back winglets down along fold lines 6. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front. You are ready to fly!

MAKE FIRST FOLD ON THIS LINE 1

STOP FOLDING WHEN YOU REACH THIS LINE



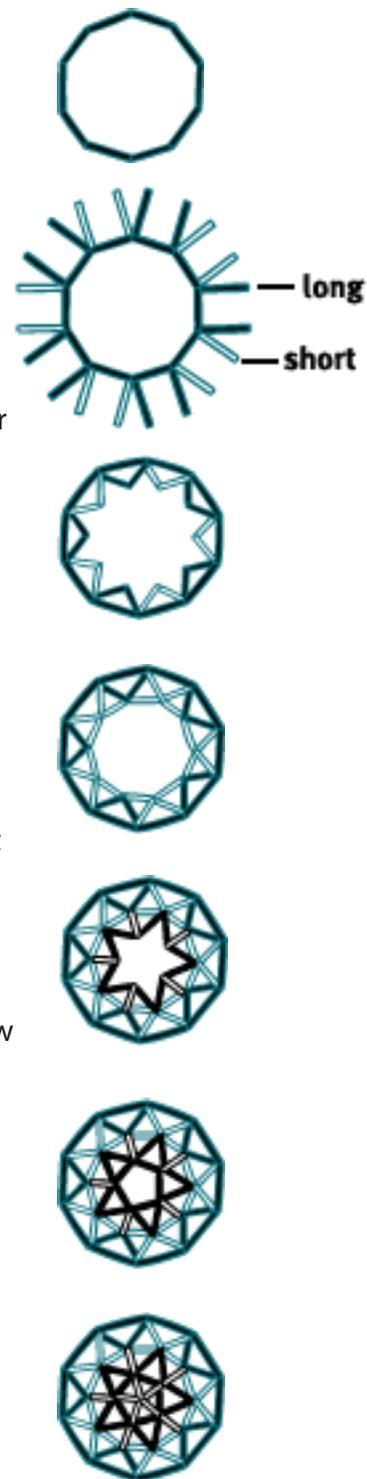


What You Will Need

- many newspapers
- masking tape
- pencils (for rolling tubes)
- measuring tape
- markers, glitter, beads, and glue for decorating

Directions

1. Stack three flat sheets of newspaper together. Starting in one corner, roll the sheets up together as tightly as you can to form a tube. When you reach the other corner, tape the tube to keep it from unrolling. Repeat until you have 65 tubes.
 2. Now cut down the tubes to make 35 "longs" and 30 "shorts." Longs: Cut off both ends of a tube until it is 71 centimeters long. Use this tube as a model to create 34 more longs. Be sure to mark all the longs clearly in some way, such as with colored tape, so you can tell them apart from the shorts. Decorate the tubes if you like. Shorts: Cut off both ends of another tube until it is 66 cm long. Use this tube as a model to create 29 more shorts. Decorate the tubes if you like.
 3. First, tape 10 longs together to make the base of the dome.
 4. Tape a long and a short to each joint. Arrange them so that there are two longs next to each other, followed by two shorts, and so on, as shown.
 5. Tape the tops of two adjacent shorts together to make a triangle. Tape the next two longs together, and so on all the way around.
 6. Connect the tops of these new triangles with a row of shorts. (The dome will start curving inward.)
 7. At each joint where four shorts come together, tape another short sticking straight up. Connect this short to the joints on either side with longs, forming new triangles.
 8. Connect the tops of these new triangles with a row of longs.
 9. Finally, add the last five shorts so that they meet at a single point in the center of the dome. (You might need to stand inside the dome to tape them together.)
- To test your dome's strength, see how many magazines you can load on top.



What You Will Need

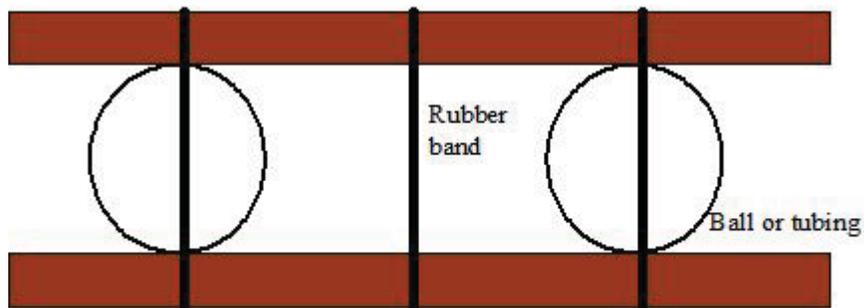
- Cardboard or plywood
- Tennis balls (or golf balls or marbles)
- Rubber bands

Directions

Enclose a few golf balls, tennis balls, marbles or tubing within two pieces of cardboard or plywood and secure with three rubber bands as shown in the picture below.

The challenge will be to find a method for standardizing the intensity of the vibrations.

1. Either assign one student from each group or one student from the class to develop 2 different vibration levels.
2. The teacher to develop the standard and perform all the tests.



1 1657 N Lincoln St



2 2218 Beverly Pl



3 309 Regent St



4 404 Regent St



5 2525 Dwight Way



6 2601 Crafton Way



7 909 Bristol Ave



8 2643 Clarendon Way



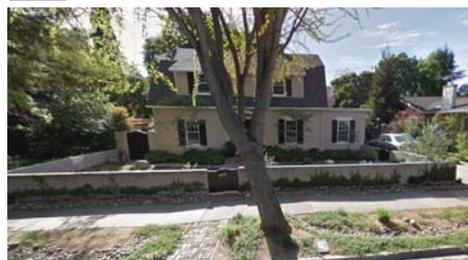
9 2629 Westminster Ave



10 2645 Westminster Ave



11 2273 Crafton Way



12 2257 Crafton Way

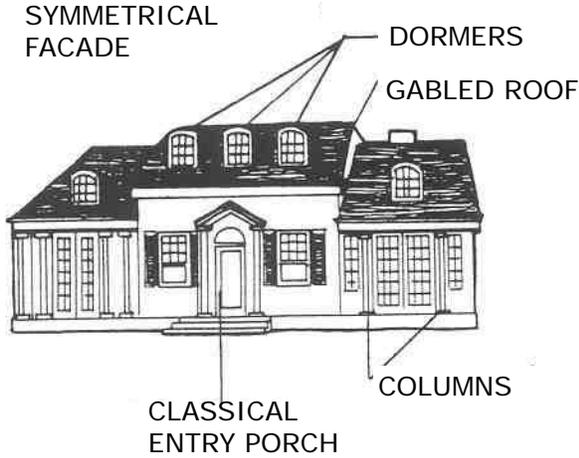


★ 1525 Pacific Ave

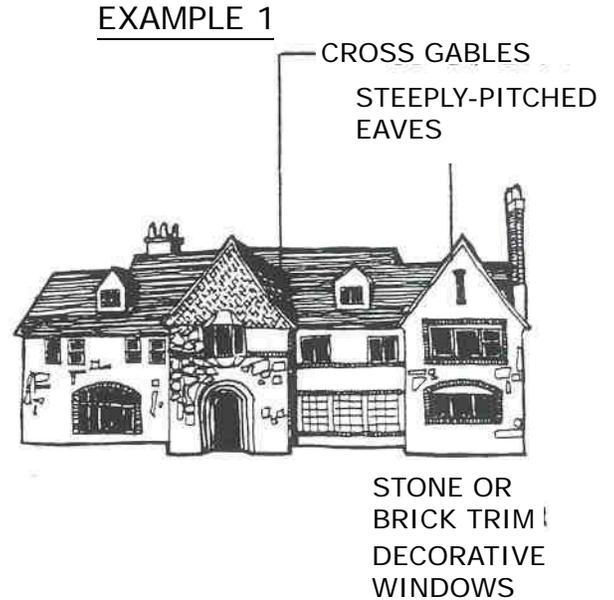




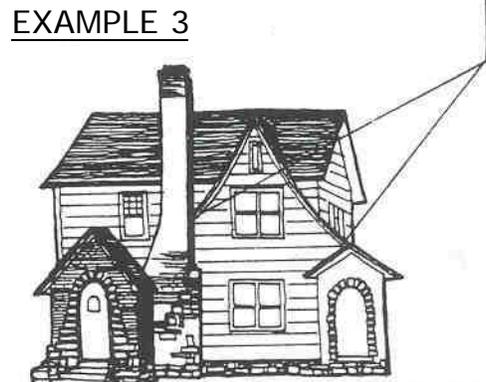
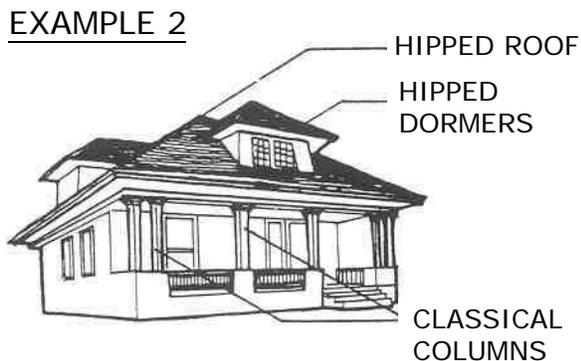
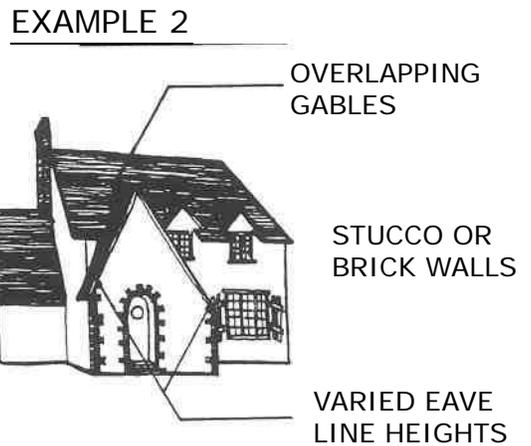
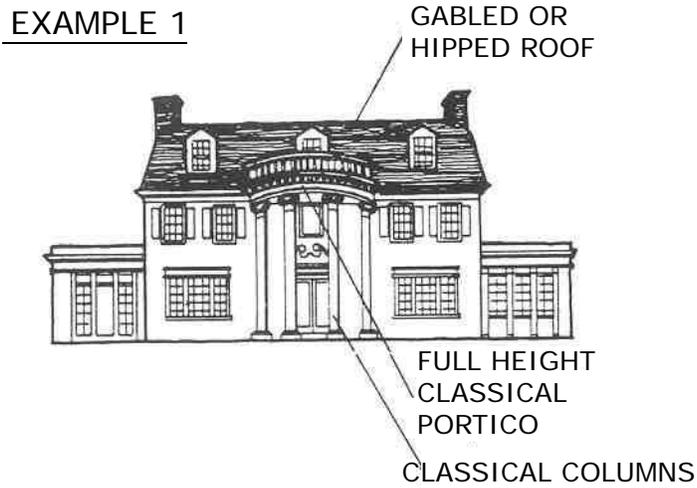
COLONIAL REVIVAL



TUDOR REVIVAL



CLASSICAL REVIVAL



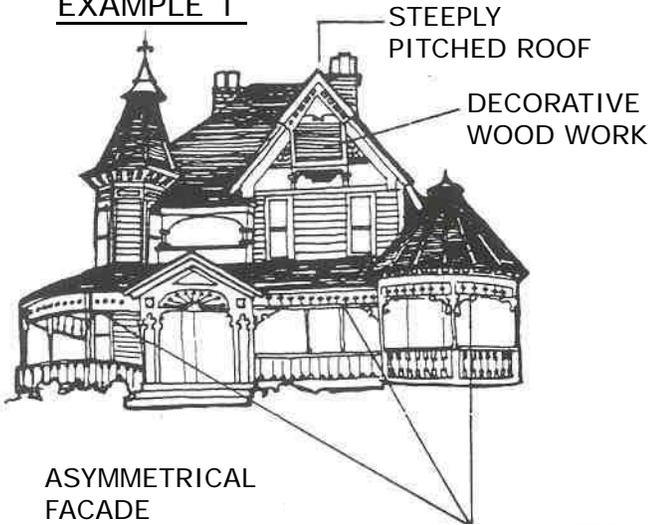


NEIGHBORHOOD WALKING TOUR

COMMON ARCHITECTURAL STYLES

QUEEN ANNE

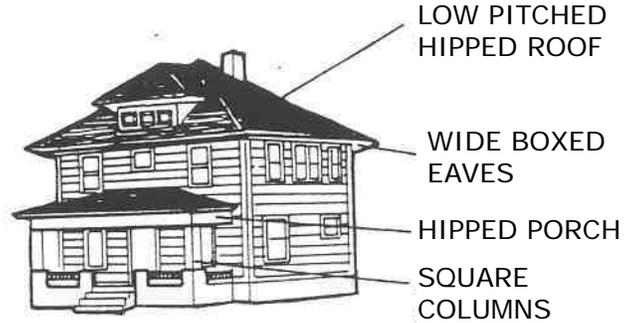
EXAMPLE 1



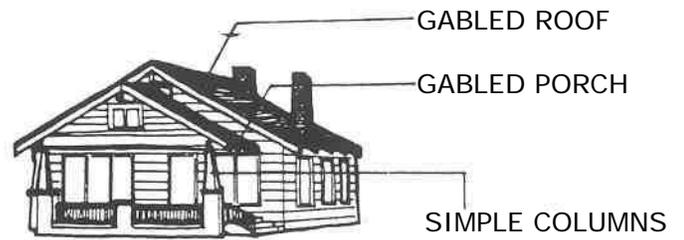
EXAMPLE 2



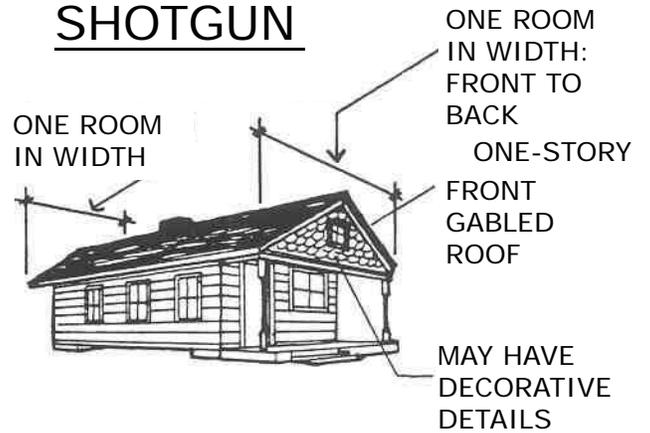
PRAIRIE SCHOOL



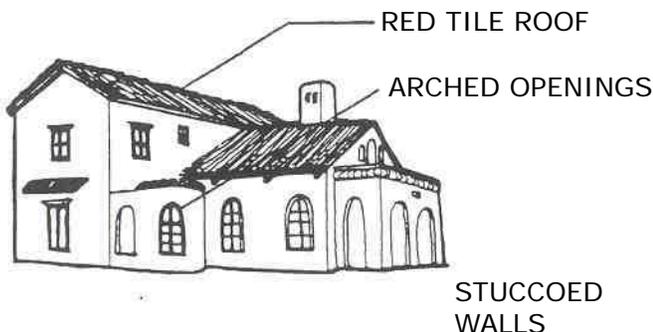
BUNGALO W/ CRAFTSMAN



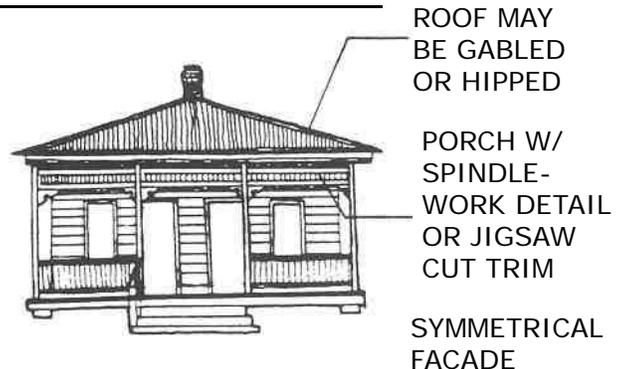
SHOTGUN



MISSION/SPANISH COLONIAL REVIVAL

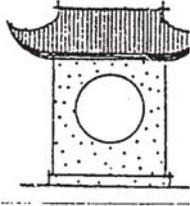


FOLK VICTORIAN



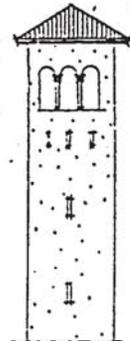


GATEWAYS



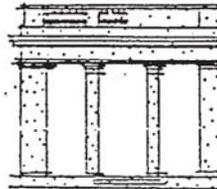
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TOWERS



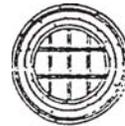
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COLONNADE



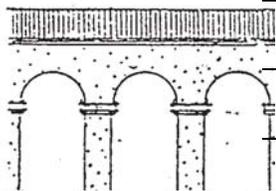
Four horizontal lines for notes.

WINDOWS



Four horizontal lines for notes.

ARCADES



Four horizontal lines for notes.

DOORWAYS



Four horizontal lines for notes.

Where are the most interesting architectural elements located in your neighborhood?
(please answer in space above next to sample elements)





LEGEND

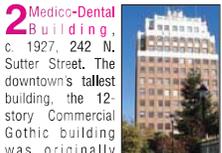
1. San Joaquin Revenue & Recovery
2. Medico-Dental Building
3. Elks Building
4. S.H. Kress Building
5. Henery Apartments
6. Cort Tower
7. Bank of Stockton
8. California Building
9. Bob Hope Theatre
10. St. Mary's Catholic church
11. Hunter Square
12. Ethnic Diversity Sculpture
13. The Goddess of Justice
14. Hotel Stockton
15. Trethway Building
16. Ed Coy Garage Installation
17. St. John's the Evangelist Church
18. City Hall
19. Martin Luther King Jr. Statue
20. Civic Memorial Auditorium
21. Central Fire Alarm station
22. Memorial to Mexican Braceros
23. Fire Fighters Memorial
24. Stockton Rising
25. Event Center Garage Entryway Feature
26. Confucius Monument
27. Sperry Flour Mill
28. Sperry Union Mill Warehouse

Map is not to scale.

For information, contact the Downtown Stockton Alliance at (209) 464-5246



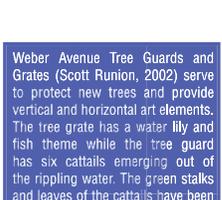
1 San Joaquin Revenue and Recovery Building (Emergency Hospital), c. 1905, 220 N. San Joaquin Street. It was built in the Mission Revival style and replaced the old receiving hospital located in the cellar of the county jail building, originally next door. Between 1905 and 1941, almost a half million people received care in the hospital.



2 Medico-Dental Building, c. 1927, 242 N. Sutter Street. The downtown's tallest building, the 12-story Commercial Gothic building was originally devoted exclusively to medical and dental professionals. The cornerstone reads "Dedicated to the Practice of Medical Service and to the Service of Humanity."



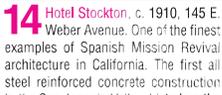
3 Elks Building, c. 1908, 36 N. Sutter Street. The 5-story building originally housed the Benevolent Protective Order of Elks until 1976. The building featured a huge stained glass dome skylight intended for the San Francisco Elks Hall however destroyed by the Great 1906 Earthquake and Fire. The building lobby contains the original mosaic floor with Elks motif.



4 S.H. Kress Building, c. 1930, 409 E. Main Street. Decorated with terra cotta elements from the renowned Gladding McBean firm, the structure boasts one of the city's finest Art Deco facades. Recently remodeled, the interior lobby features a large mural designed by Russel Joseph Buckingham in 2005.



Weber Avenue Tree Guards and Grates (Scott Runton, 2002) serve to protect new trees and provide vertical and horizontal art elements. The tree grate has a water lily and fish theme while the tree guard has six cattails emerging out of the rippling water. The green stalks and leaves of the cattails have been powder-coated in green for a hard and durable surface and the cattail heads have been treated with liver of sulfate to create a rich brown color as in nature. The design merges the regional and historical heritage of the Delta and the waterways.



14 Hotel Stockton, c. 1910, 145 E. Weber Avenue. One of the finest examples of Spanish Mission Revival architecture in California. The first all steel reinforced concrete construction in the San Joaquin Valley. Listed on the National Register of Historic Places, "The Stockton" was restored and officially reopened in 2005. The lobby features original fireplace and two story mezzanine. Oak railings and wainscoting were exactly replicated and leaded stained glass panels were cleaned and restored. The upper floors now provide apartments and the ground floor hosts the Paragary's Restaurant. The great rooftop terrace provides a magnificent waterfront view to the west.

5 Henery Apartments, c. 1913, 121 S. Sutter Street. The brick and terracotta building has a distinctive Mansard roof style with three dormers facing the street. Arched windows, decorative surrounds, cornices with medallions and decorative brackets identify the Henery as the finest example of French Second Empire Style in Stockton. Designed by Stockton's most famous local architect, Glenn Allen, the Henery was designated a Stockton Landmark in 1986.



6 Cort Tower (Commercial & Savings Bank), c. 1915, 343 E. Main Street. Built by the Commercial & Savings Bank, this is a fine example of the Beaux Arts - Renaissance Revival style in vogue early in the century. The building was heavily damaged by a fire in 1923, and following repairs was doubled in size. The building was placed on the National Register of Historic Places in 1980.



7 Bank of Stockton (Stockton Savings & Loan Society), c. 1908, 301 E. Main Street. Stockton's first "skyscraper." Designed by San Francisco architects Meyers and Ward in the Classic Revival style. The building featured Stockton's first revolving door and an interior of marble quarried in Tuolumne County. The top two floors have always been occupied by The Yosemite Club, the oldest private club in California, founded in 1889.



15 Tretheway Building, c. 1892, 227 E. Weber Ave. Listed on the National Register of Historic Places, the building was originally the Argonaut Hotel with a hardware store on the ground level. Built in the Queen Anne style with Romanesque and Moorish influences, the facade is embellished with cast zinc floral patterns and sandstone. The building originally had a much taller false front parapet which fell as a result of the San Francisco earthquake of 1906.

16 Ed Coy Garage Installation (David Griggs, 2005), Hunter St. Square medallions with a wheat sheaf motif on the west and north faces of the building; round oak tree motif cast medallions on the north and east faces; root bud elongated cast elements for the central north face; and an aqua colored LED lit column for the northwest corner at the entrance. The column lighting is controlled by a photocell and illuminates from dusk until midnight each night.



17 St. John's Episcopal Church, c. 1889, and Guild Hall, c. 1892, 306 N. El Dorado Street. The Episcopal congregation built their first church on this site in 1857. The current St. John's building is a rare example of Nordic architecture and replaced the first church after it was demolished in 1889. The chancel window from the original church is located above the west entrance. St. John's parish is the third oldest Episcopal Church on the Pacific Coast.



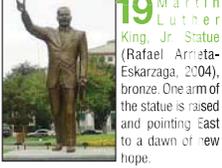
8 California Building (Farmer's and Merchant's Bank), c. 1917, 115 S. San Joaquin Street. The Italian Renaissance Revival building was designed by prominent San Francisco architect, George W. Kelham, who also designed the St. Francis Hotel and San Francisco Public Library. The central lobby features Tennessee marble floors with walls and pillars covered with Travertine marble. Its coffered ceilings are 25 feet high and are ornamented with painted plaster.

Main Street: In the 1850s, the waterfront businesses, plagued by a series of floods and fires, started migrating towards Main Street. Early buildings included grocery and provision stores, saddle and harness shops, as well as hardware and machinery merchants. Horse drawn carts and buggies traveled the unpaved road while pedestrians used the wooden sidewalks. By the turn of the century, Stockton had grown into an industrial city. Streetcars running down Main Street and the presence of banks, hotels, and theatres, attracted a steady flow of visitors. By the 1930's, Main Street boasted several skyscrapers and became the center of town's leading shops and prominent businesses. The pioneer stores were replaced by larger retail stores, including the Owl Drug Store, J.C. Penneys, or Woolworth's. During the 1960's, Main Street was made into a one-way street in an effort to improve the flow of traffic downtown.

9 Bob Hope Theatre (Fox California Theatre), 242 E. Main Street. Constructed in 14 months in the Spanish Colonial Revival style by Fox Theatres, it opened on October 14, 1930. After closing for renovations in 2002, the



18 City Hall, c. 1926, 325 N. El Dorado Street. Built in the Greco-ionic style of stone and marble, the lobby of this elegant building feature a richly coffered ceiling and decorative bronze electrolites. A mural by Gregg Custodio represents different ethnic groups and trades that settled in Stockton.



19 Martin Luther King, Jr. Statue (Rafael Arrieta-Eskarzaga, 2004), bronze. One arm of the statue is raised and pointing East to a dawn of new hope.



20 Civic Memorial Auditorium, c. 1926, 525 N. Center Street. The Roman-Doric style building is dedicated in memory of Americans who lost their lives in World War I. The exterior is finished in stucco to resemble sandstone and trimmed with terra cotta. Each side presents a polychrome panel of the seal of the City of Stockton, State of California, federal government and emblems of the American Legion, Spanish American War Veterans, Veterans of Foreign Wars and the Grand Army of the Republic. The twelve emblems of the different branches of the armed forces are contained in the building's frieze.



Fox was reopened in September 2004 as the Bob Hope Theatre. One of the only remaining "movie palaces" in California. The sidewalk mosaic represents the rebirth of the theatre (Myklebust & Sears, 2005). The exterior lobby has the original tile and chandelier. The interior lobby features vibrant colors, gold leaf and restored chandeliers. The Italian marble floor mosaic, made up of 80,000 pieces, represents the fountain and pool which once stood in the rotunda (Evergreen/Siebrand, 2005) and is surrounded by new carpet, duplicated from historical photos. Artwork throughout includes gargoyles, coats of arms and a mural of mythic horses. The Mighty Robert Morton Organ was originally installed in the Seattle Fox Theatre.



10 St. Mary's Catholic Church, c. 1861, 203 E. Washington Street. The building has been modified since the cornerstone was laid in 1861. A transept was added in 1870 and the steeple bell tower was raised in 1893, but it remains true to its red brick Gothic Revival style.

11 Hunter Square, west of the County Courthouse, has always been the center of county government. It hosted numerous public meetings and political rallies. It was the site of the 1857 California State Fair, on July 4,

1876, it was the location of the Centennial Celebration, and in 1909, a street fair depicting a gold mining camp, the "Rush of '49," was held there. In the 1850s, a fountain was built from an artesian well. It was awarded a blue ribbon at the State Fair. In 1891, a granite drinking fountain was constructed with funds collected by the Stockton Mail newspaper. The tall classical-style fountain was known as the "Mail Fountain" and included an ice chamber for cooling water. The current fountain was built in 1967 as the centerpiece for the redesigned square.



12 Ethnic Diversity Sculpture (Eric Lee, 1989), corner of San Joaquin and Weber, concrete. This site honors the ethnic diversity of San Joaquin County.

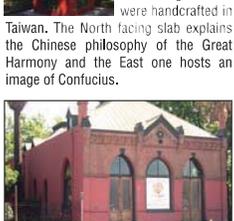
13 The Goddess of Justice, c. 1890, Hunter Square. Lady Justice is an allegorical personification of the moral force that underlies the legal system. Originally, the statue stood 172 feet above the street on top of the second county courthouse. The figure, made of gilded zinc, measures 12-feet tall, and weighs 500 lbs. The current courthouse was built in 1960 and the Goddess was set upon a pedestal outside the west entryway.



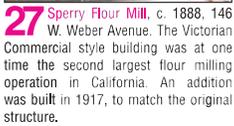
Downtown Sidewalk Brass Inlays (Dan Snyder, 2004) Snyder placed six sets of brass inlays around the downtown area, catching the attention of Guaranty Bank. That prompted Guaranty to commission Stockton's first public/private public art partnership in placing a set of brass inlays in front of the Guaranty Bank branch on Hunter Street.



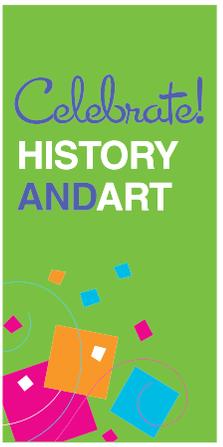
25 Event Center Garage Entryway Feature (Gordon Huether, 2005) 22,000 Mattell toy cars make up this piece of art on the west side of the Stockton Arena parking garage. The cars are epoxied and urethane sealed onto 4ft X 8ft sections. The mosaic exploits an idea of tongue-in-cheek humor, the element of surprise, and the direct relevance to the building that holds the artwork.



26 Confucius Monument, head of the Stockton Channel at McLeods Lake, 13 and a half foot high pagoda-like monument of red and green tile was a gift to the City of Stockton from the Chinese Community for the bi-centennial celebration. The red roof tiles and inscribed marble slabs along the walls were handcrafted in Taiwan. The North facing slab explains the Chinese philosophy of the Great Harmony and the East one hosts an image of Confucius.



27 Sperry Flour Mill, c. 1888, 146 W. Weber Avenue. The Victorian Commercial style building was at one time the second largest flour milling operation in California. An addition was built in 1917, to match the original structure.



Founded in 1849 by Capt. Charles Weber, Stockton began as a tent settlement and supply center for the southern miners during the California Gold Rush. Between 1850 when it incorporated, and 1900 when it emerged as a destination for entertainment and recreation, the natural waterways running through the city were altered to alleviate the devastating floods. The completion of the channel in 1933 made it a major inland port with a direct route to the Pacific Ocean. Today's Stockton is a modern city, home to over quarter of a million people.

For more information or to schedule a guided tour: 209.464.5246 or www.downtownstockton.org

Downtown maintenance hole covers, designed by Stockton artist Molly Toberer, carry unique aesthetic legacy of the American 1930's style. There are 20 units spread from Martin Luther King Plaza to Main St. and from Weber Point to San Joaquin St. 17 unique designs are represented such as Work, Taste, Grow, Invent, Sister Cities and others.



28 Sperry Union Mill Warehouse, (c. 1870) known as the Waterfront Warehouse, 445 W. Weber Ave. The oldest surviving structure on the Port of Stockton main channel. In 1870s it was part of the Eureka Warehouse complex occupied by the Granger Cooperative Union. Now occupied by restaurants and offices, it features exposed interior wood beams and a picturesque amphitheater.

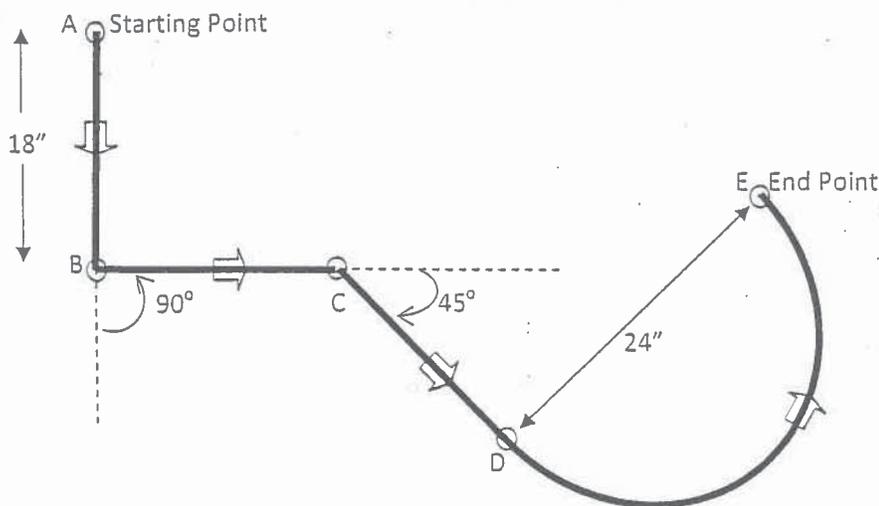


ACE'd Robotics Competition

Goals

1. To design, build, and program a robot to navigate a fixed course.
2. To apply practical math and scientific concepts while learning design, mechanical construction, and computer programming.

The students' task is to program an autonomous mobile robot of their choice to navigate a determined fixed course. Students may participate individually or in groups of two. The robot must be brought to the competition and it must navigate the entire course independently without being remotely controlled. It is recommended that it is programmed before the competition and only small modifications to be made on the day of competition. Each linear line segment is 18" (1.5 ft) long. The semi-circle has a diameter of 24" (2 ft). The course will be taped on the hallway floor at the competition area; however, you **MUST** bring your own robot and a laptop if you wish to modify your code on the competition day. Each robot will be given an official score based on accuracy of the requirements given by the course. Practice runs are given within a **90** min time period, and the students are allowed two official runs, with the higher of the two your official score.



Scoring (20 points):

Make sure that you have enough battery power to last the entire course. Servos will not run properly with weak batteries.

1. The robot can move in a straight line from point A to point B: 6 points
2. The robot can make the 90° left turn and continue from point B to point C: 4 points
3. The robot can make the 45° right turn and continue from point C to point D: 4 points
4. The robot can continue from point D to point E in a semi-circle: 6 points
5. The robot must follow the path. That is, wherever the robot is, the tape under it should not be visible from the top. Deviation from the path will cause point deductions.
6. Bonus points: At the end, 2 bonus points if the center of the robot stops exactly on top of point E; 1 point if any part of the robot is on top of point E.

Path	Points allowed	First Run	Second Run
A to B	6		
B to C	4		
C to D	4		
D to E	6		
Bonus	2		
Total	22		