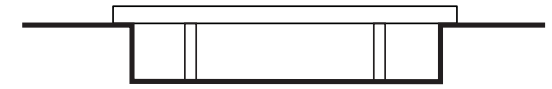
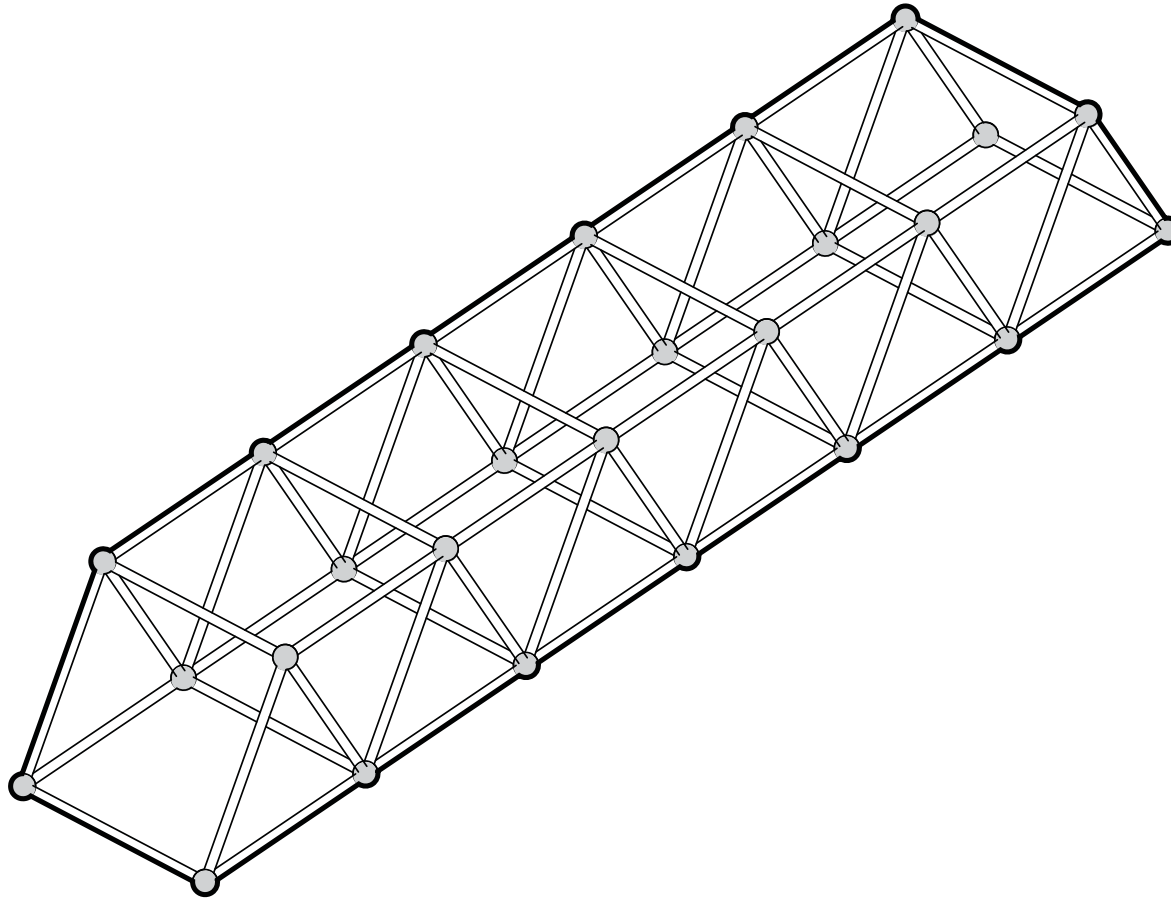
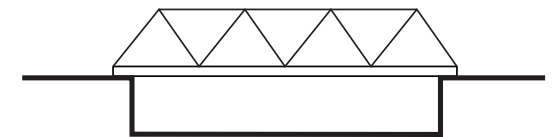


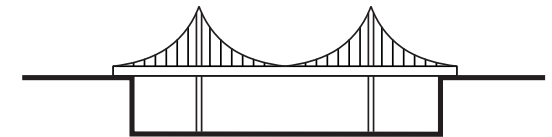
# LESSON 1: STRUCTURAL SPAN



BEAM AND GIRDER



TRUSS



SUSPENSION



ARCH

## MATERIAL REQUIRED

1. STRAWS
2. TAPE

## TIME REQUIRED

30 MIN

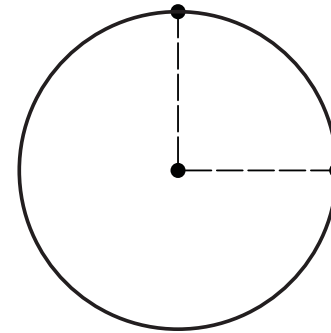
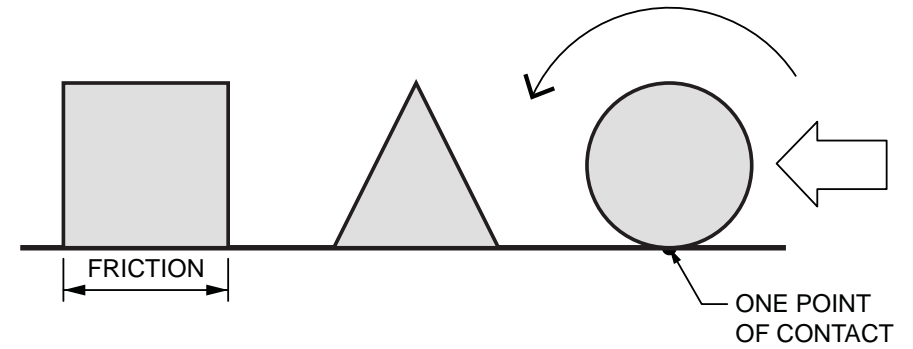
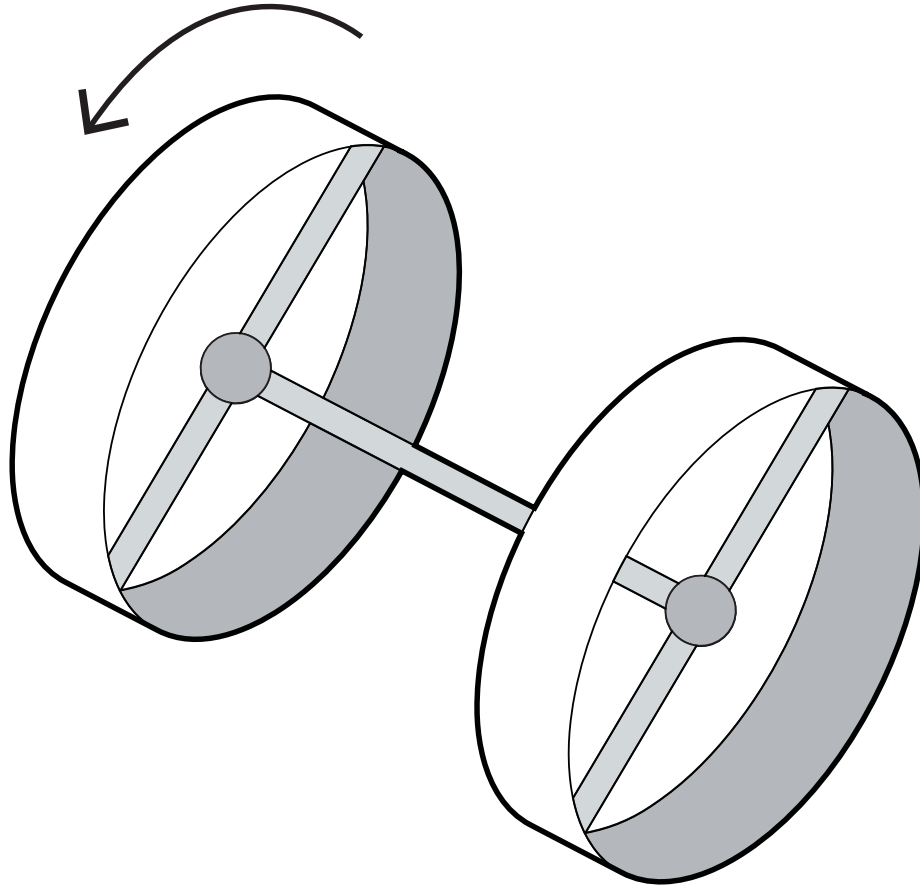
## CONCEPT

1. VARIOUS BRIDGE TYPE AND EXAMPLES
2. TRUSS CONSTRUCTION
3. TRIANGLE VS RECTANGLE

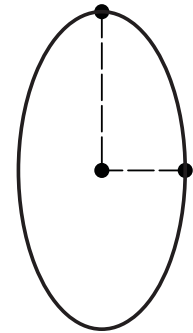
# LESSON 1: STRUCTURAL SPAN



# LESSON 2: MECHANICAL MOVEMENT



CIRCLE



OVAL

MAINTAIN EQUAL RADIUS

## MATERIAL REQUIRED

1. STRAWS
2. TAPE
3. NEWSPAPER

## CONCEPT

1. FRICTION
2. BASIC ASSEMBLY
3. CIRCLE VS OVAL

## TIME REQUIRED

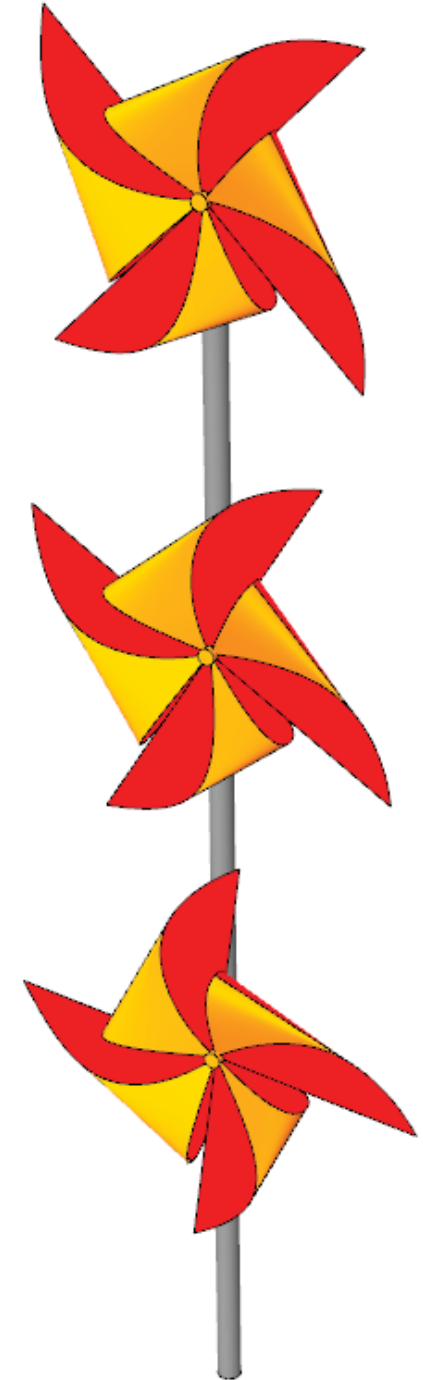
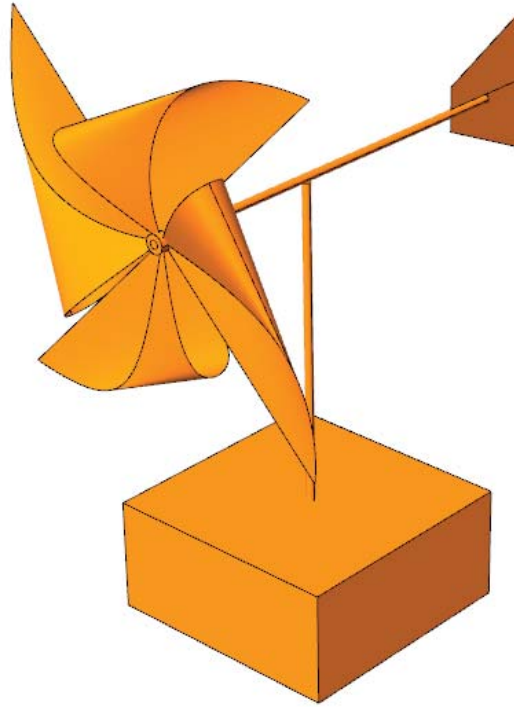
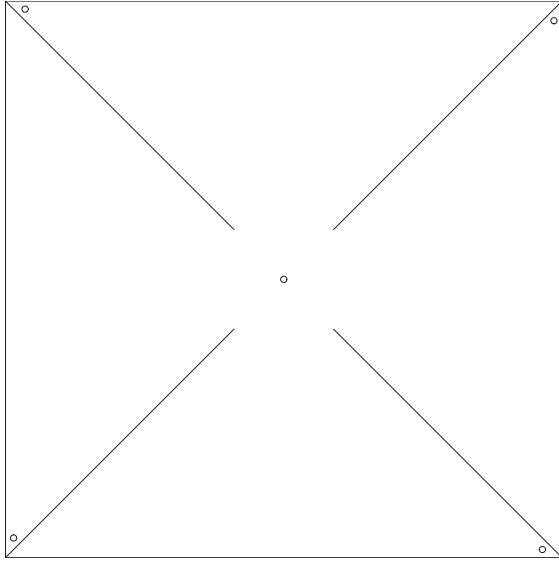
30 MIN



## LESSON 2: MECHANICAL MOVEMENT



# LESSON 3: HARVESTING ENERGY



## MATERIAL REQUIRED

1. 3 TEMPLATE PRINTED ON 8.5" X11"
2. NEWSPAPER FOR SUPPORT
3. SCISSOR
4. TAPE
5. PAPER CLIP
6. 1 Electrical Fan

TIME REQUIRED  
30 MIN

## CONCEPT

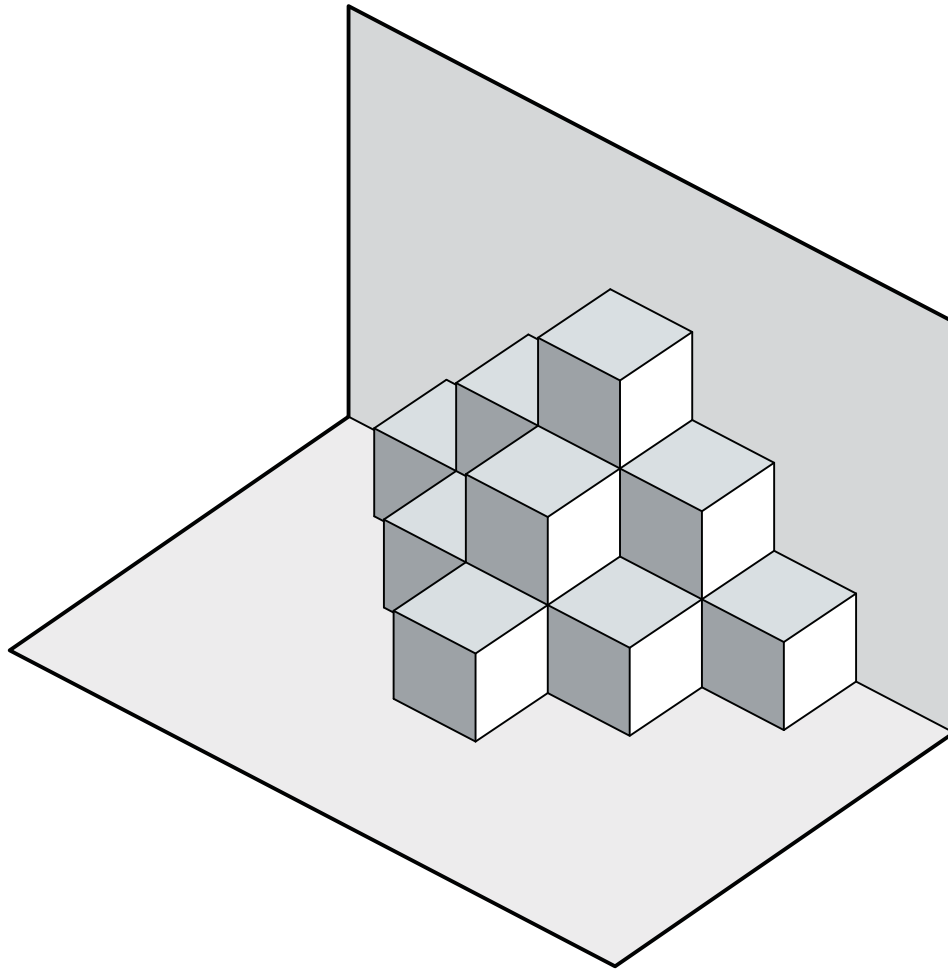
1. WINDMILL
2. BASIC ASSEMBLY

## LESSON 3: HARVESTING ENERGY





# LESSON 4: FOLDABLE CONSTRUCTION



## MATERIAL REQUIRED

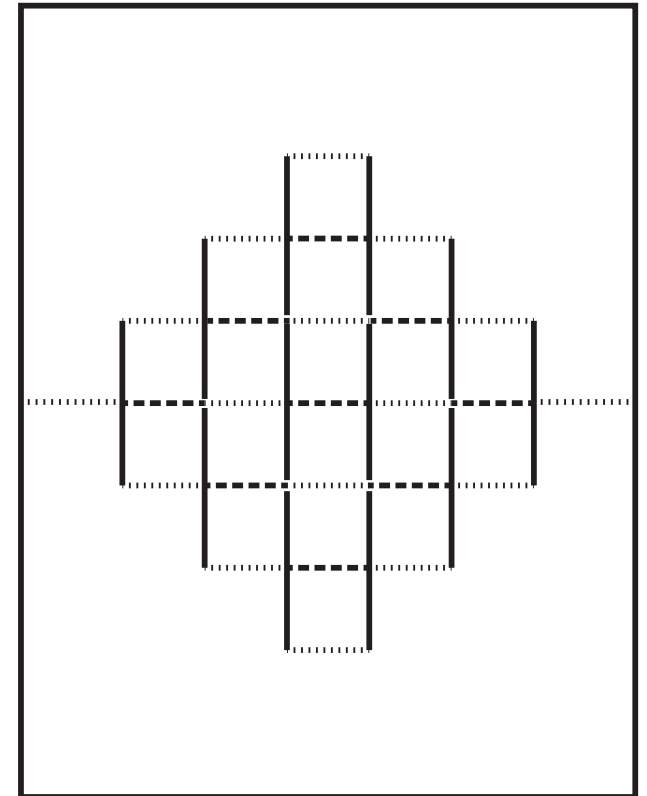
1. CARD WITH TEMPLATE
2. SCISSOR

## TIME REQUIRED

30 MIN

## CONCEPT

1. FOLDING TECHNIQUE
2. ARCHITECTURAL DRAWING
3. 2D TO 3D
4. CREATE A PLAN WITH STUDENT'S NAME



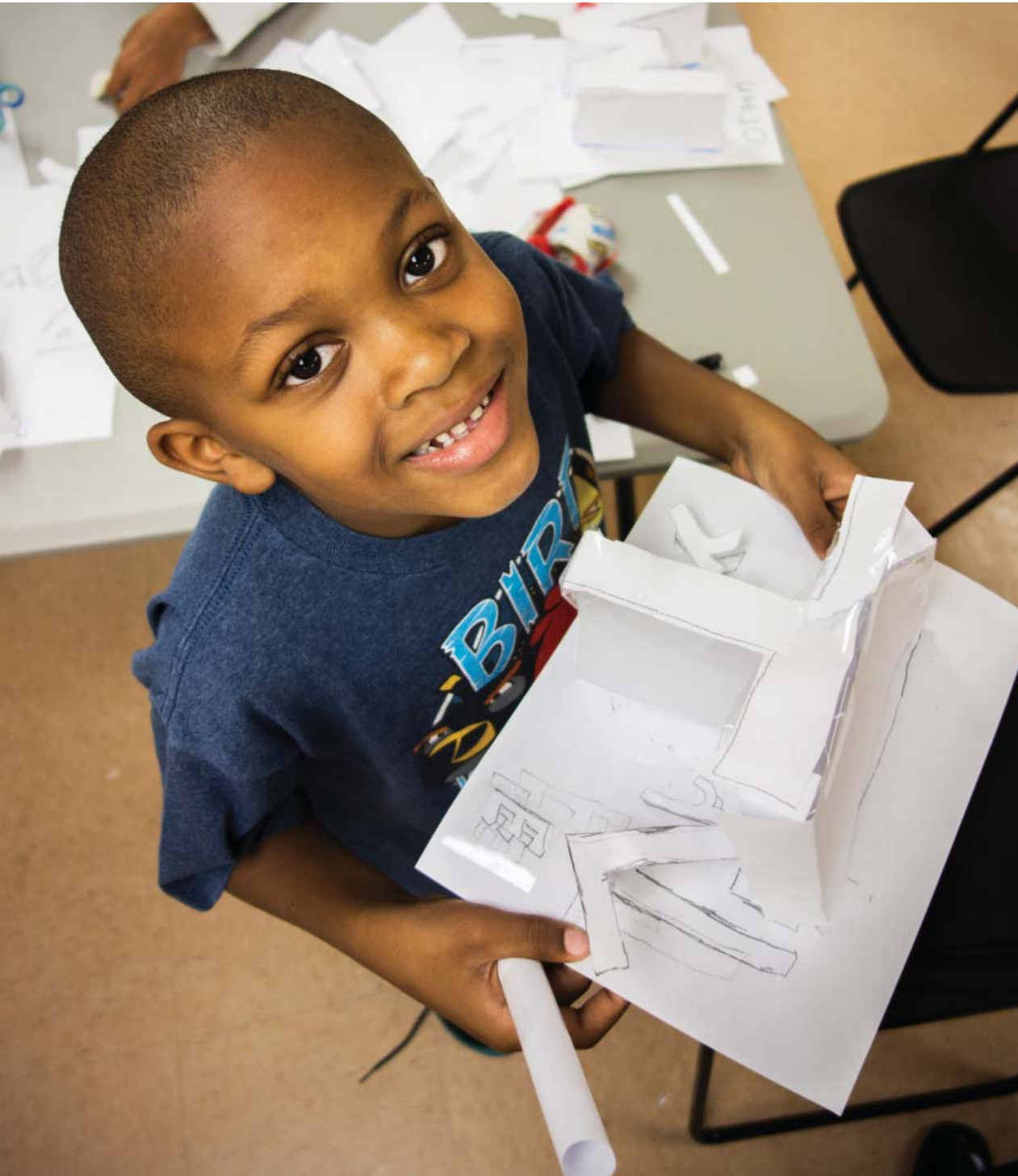
## LINETYPE

———— CUT

..... FOLD DOWN

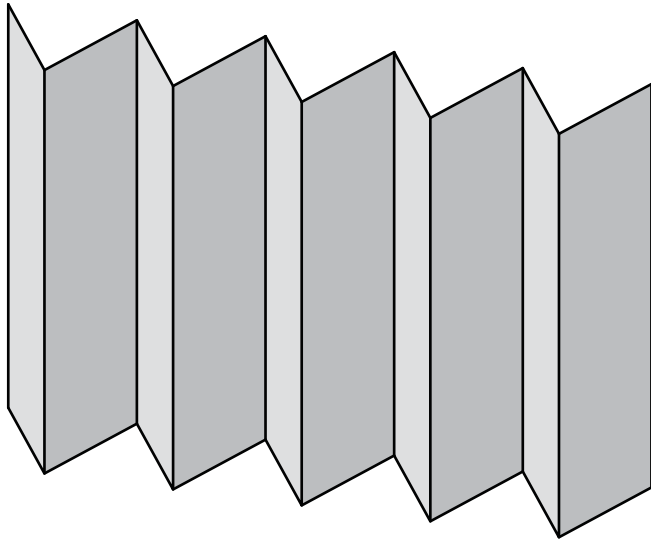
----- FOLD UP

# LESSON 4: FOLDABLE CONSTRUCTION

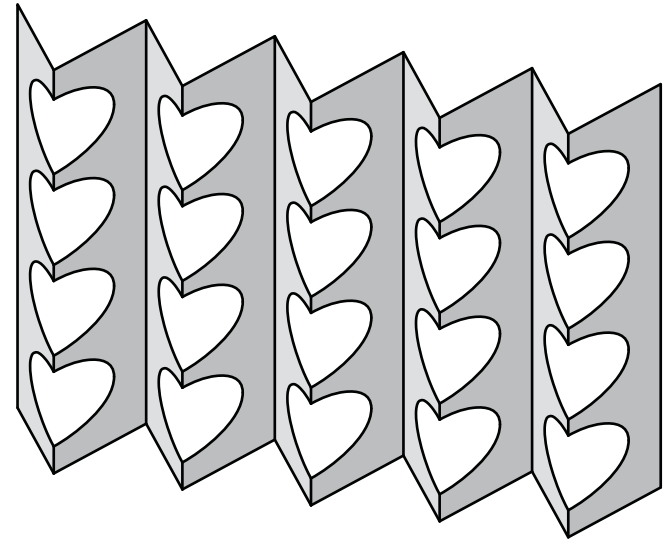




# LESSON 5: PERFORATED LANTERN



CORRUGATION



PERFORATION

## MATERIAL REQUIRED

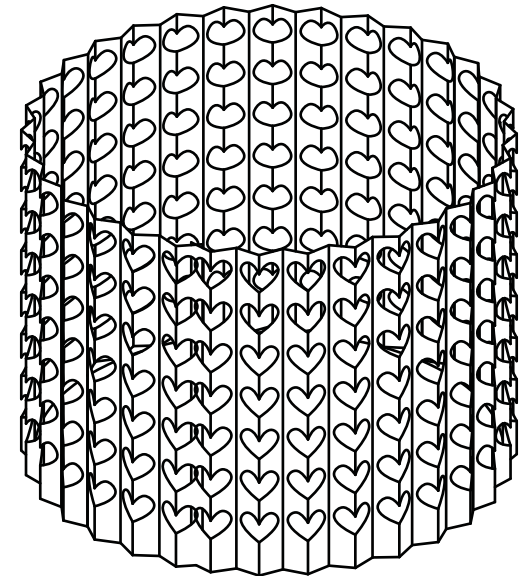
1. 4 PIECE OF LETTER SIZE PAPER
2. SCISSOR
3. TAPE

## TIME REQUIRED

30 MIN

## CONCEPT

1. FOLDING & CUTTING TECHNIQUE
2. STRUCTURE
3. HISTORY OF CHINESE LANTERN

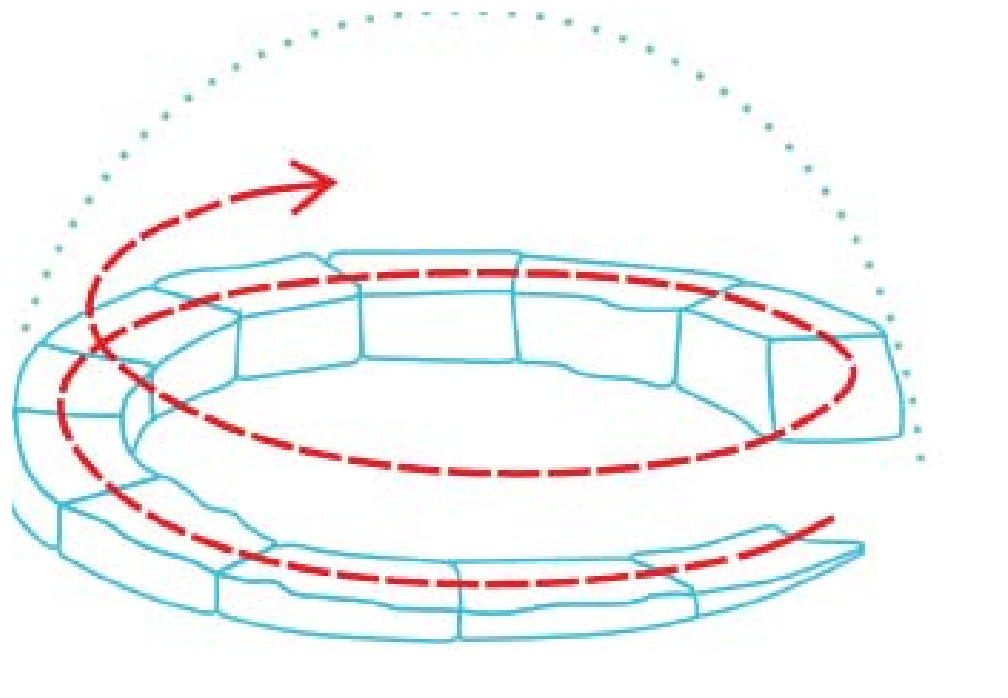
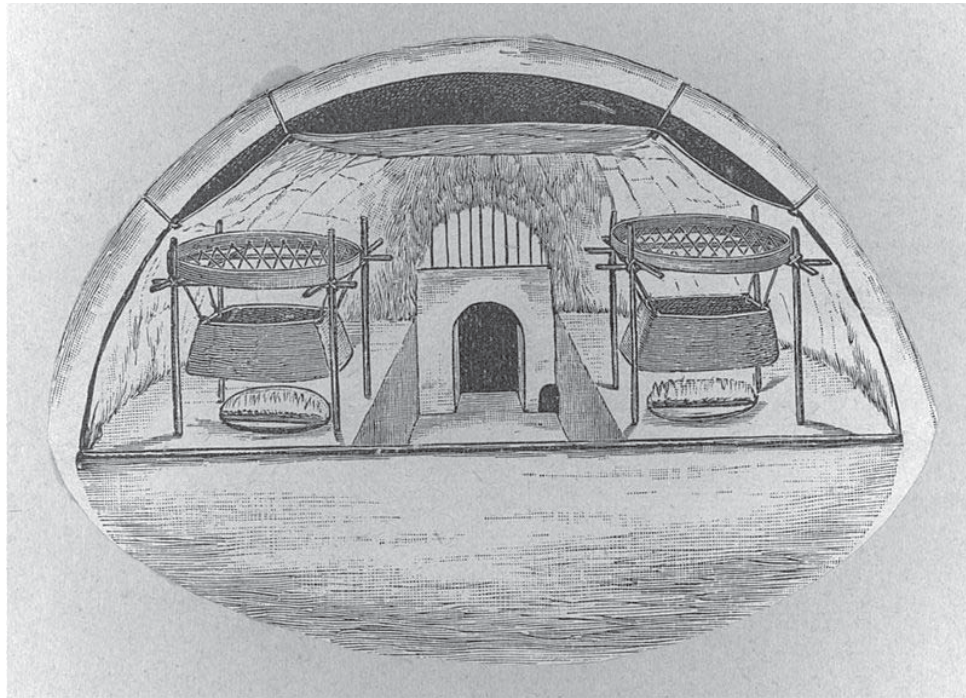


# LESSON 5: PERFORATED LANTERN



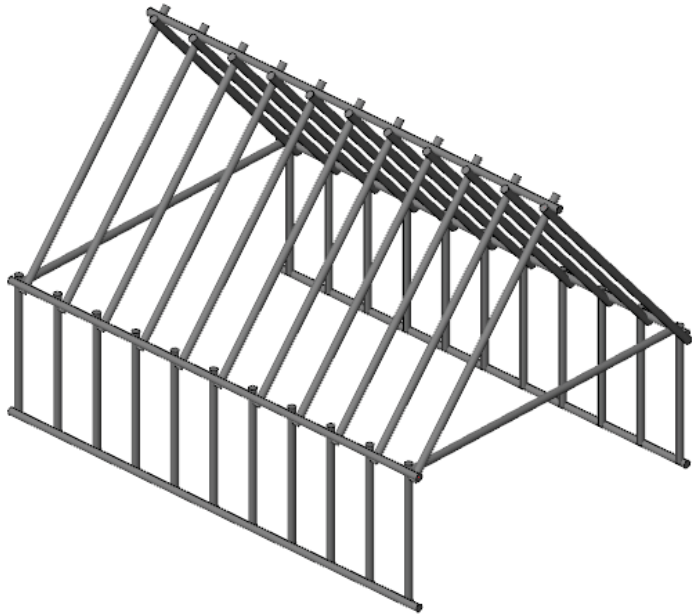


# LESSON 6: PRIMITIVE HOUSING

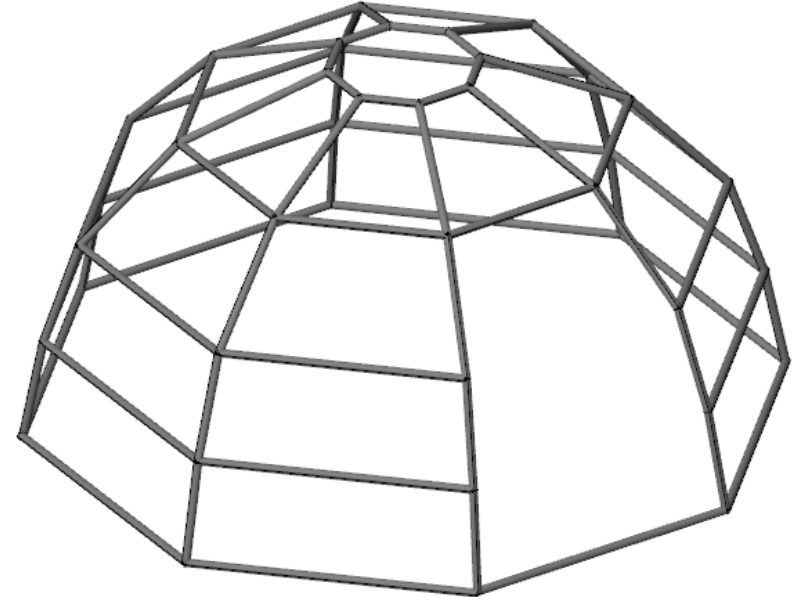




# LESSON 6: PRIMITIVE HOUSING



HOUSE



IGLOO

## MATERIAL REQUIRED

1. NEWSPAPER
2. SCISSOR
3. TAPE

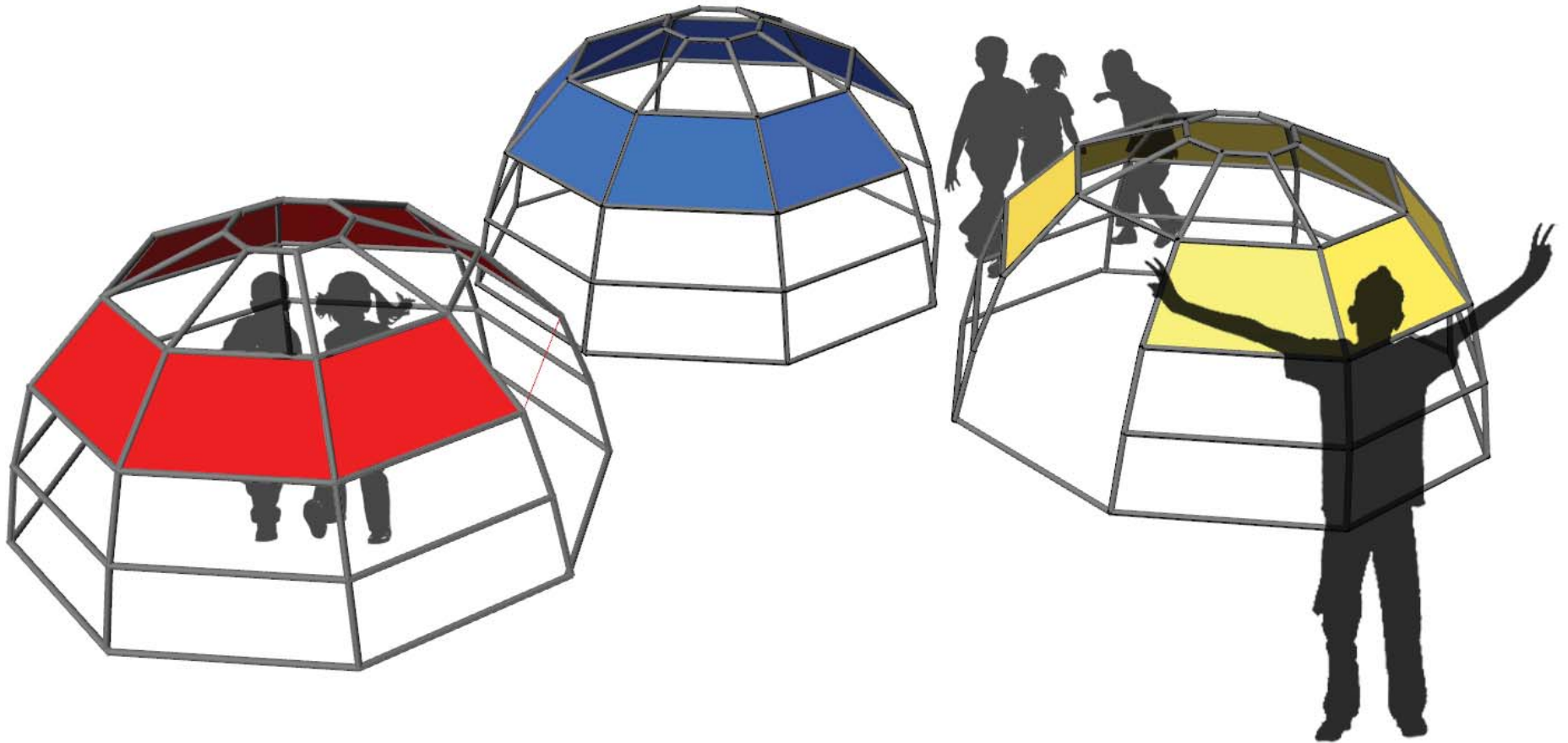
## TIME REQUIRED

60 MIN

## CONCEPT

1. HISTORY OF HOUSING
2. HABITABLE CONSTRUCTION
3. CONSTRUCT CURVE SURFACE OUT OF STRAIGHT MODULE

# LESSON 6: PRIMITIVE HOUSING



A VILLAGE OF IGLOOS

# LESSON 6: PRIMITIVE HOUSING

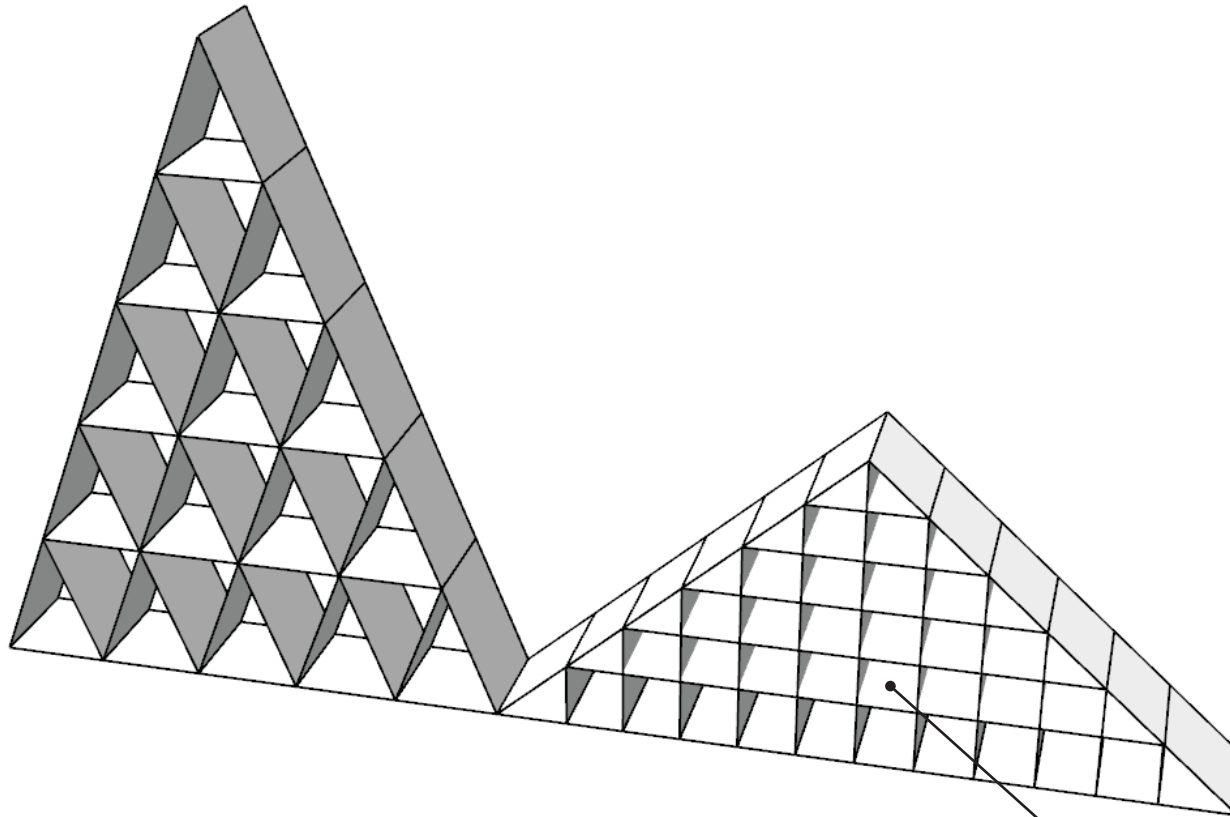




# LESSON 6: PRIMITIVE HOUSING



# LESSON 7: URBAN PLANNING



## MATERIAL REQUIRED:

1. 20 SHEET OF NEWSPAPER  
PER STUDENT
2. SCOTCH TAPE
3. SCISSORS

## CONCEPT:

1. BUILDING STRUCTURE AND SURFACE
2. SUNLIGHT
3. NEIGHBORHOOD PLANNING

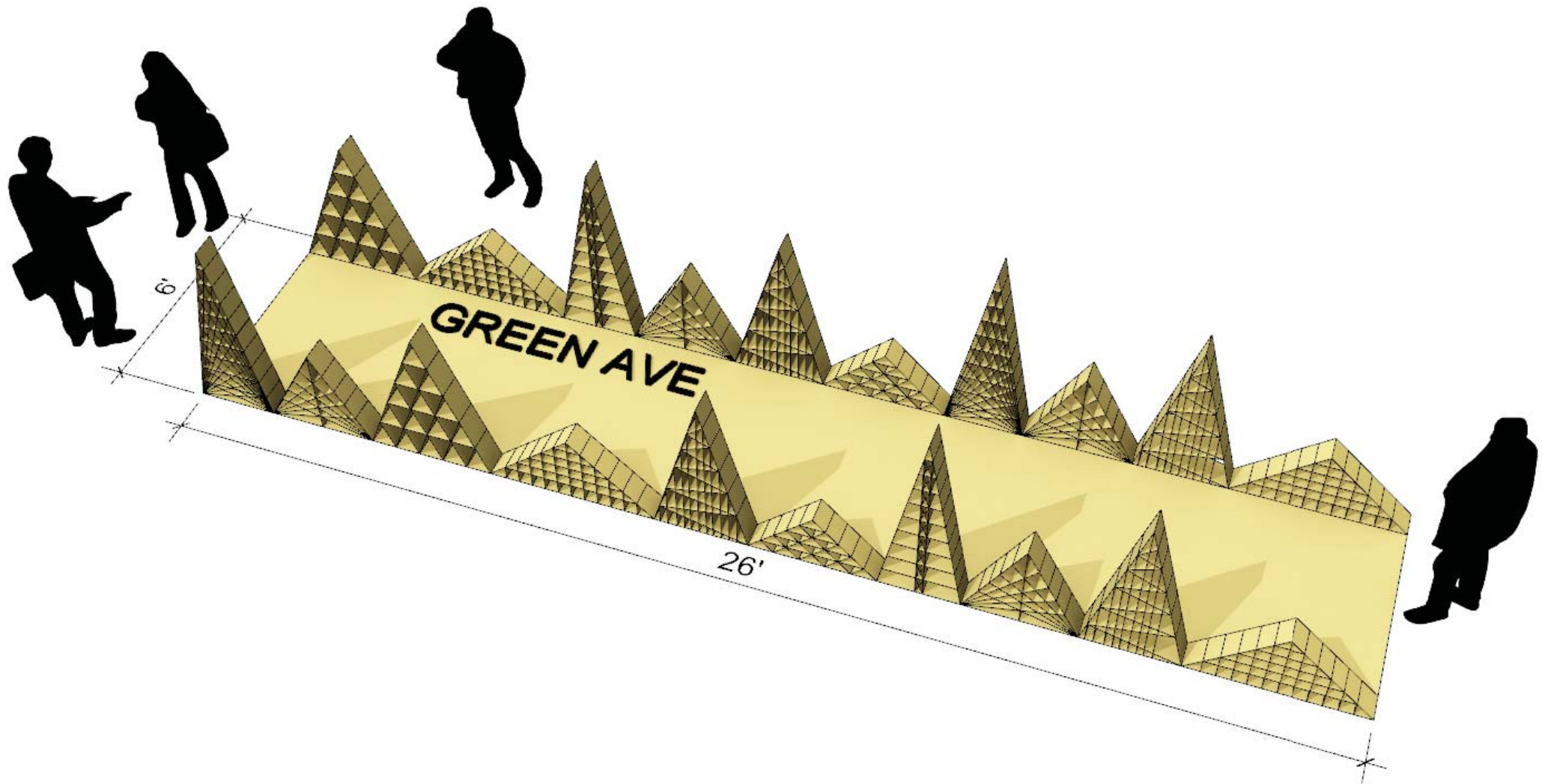
NEWSPAPER

## TIME REQUIRED

1hr 30min



# LESSON 7: URBAN PLANNING

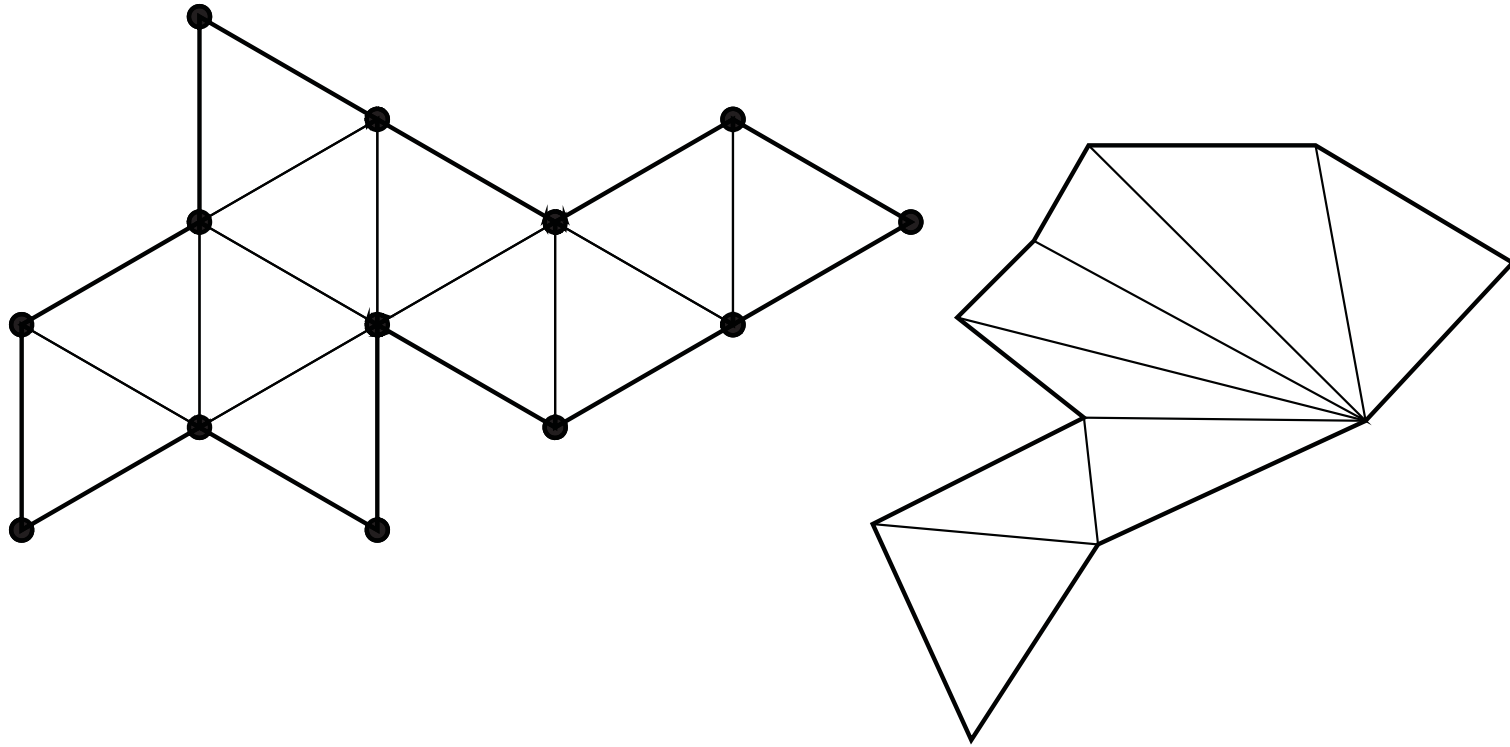




# LESSON 7: URBAN PLANNING



# LESSON 8: TESSELLATION



## MATERIAL REQUIRED:

1. TOOTHPICK
2. HANDMADE CLAY

## TIME REQUIRED

1hr

## CONCEPT:

1. BUILDING RIGID FORM USING METHOD OF TESSELLATION
2. SUBDIVISION
3. WEIGHT VS FORM

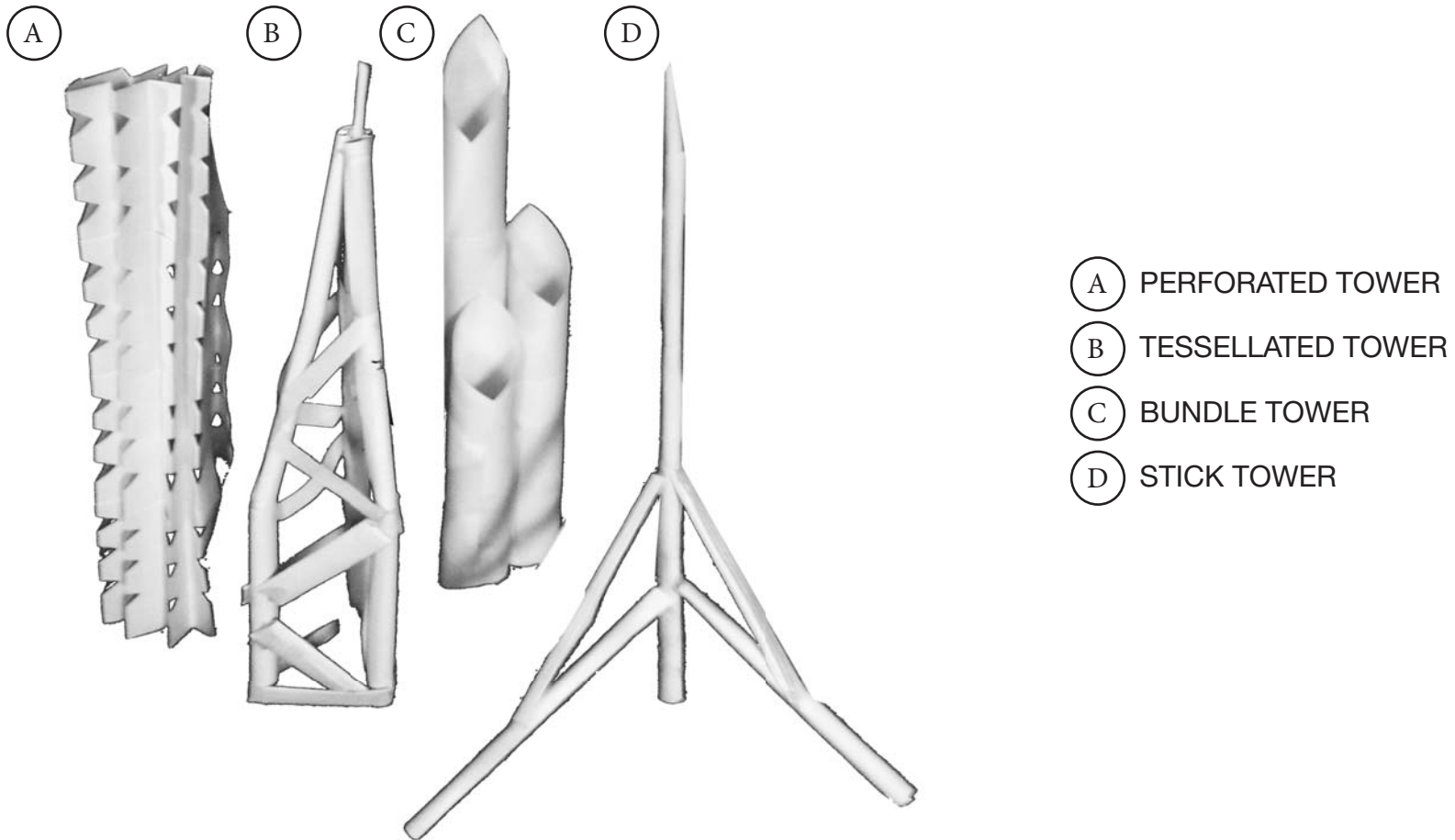


# LESSON 8: TESSELLATION





# LESSON 9: HIGH-RISE CONSTRUCTION



## MATERIAL REQUIRED:

1. NEWSPAPER
2. MASKING TAPE

## TIME REQUIRED

1.5hr

## CONCEPT:

1. COMBINE ALL BUILDING KNOWLEDGE
2. COMPETE TO BUILD THE HIGHEST TOWER
3. COMPETE TO BUILD THE BEST DESIGN

## LESSON 9: HIGH-RISE CONSTRUCTION



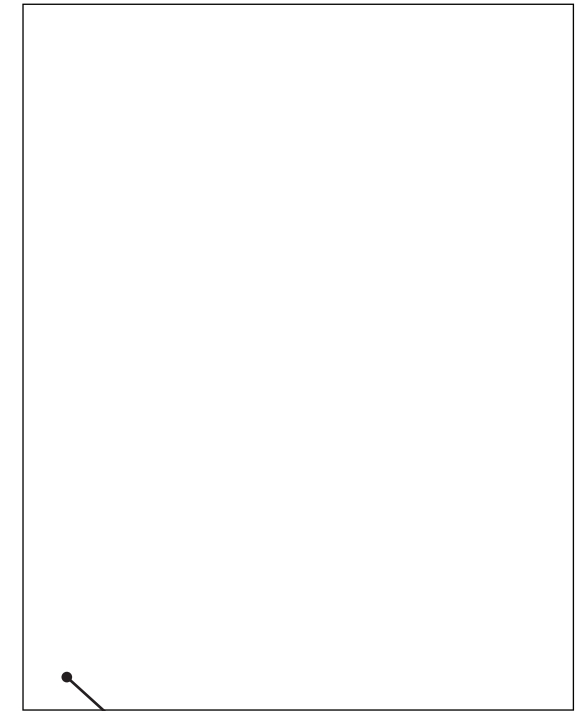
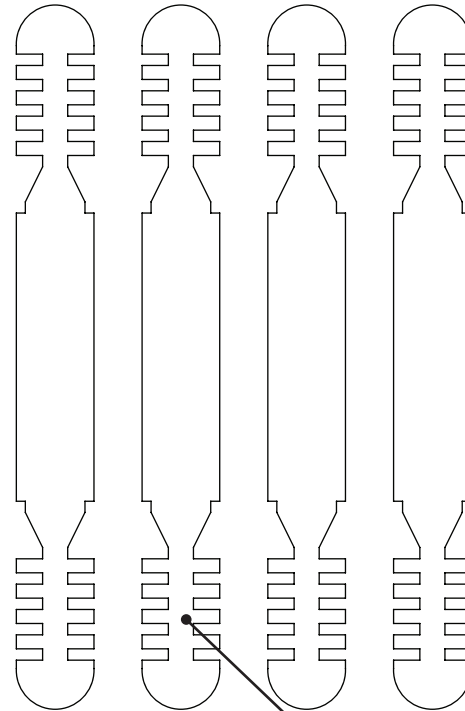
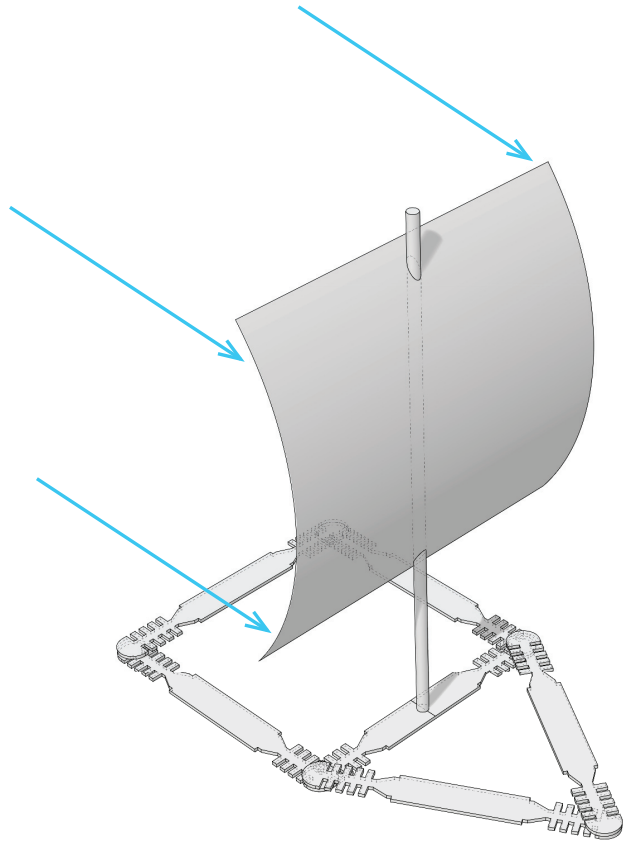


# LESSON 9: HIGH-RISE CONSTRUCTION





# LESSON 10: BOAT MAKING



## MATERIAL REQUIRED:

1. WOODEN POPSICLE STICKS
2. PAPER
3. RUBBER BANDS
4. CONTAINER

## TIME REQUIRED

1hr 30min

## CONCEPT:

1. BUILDING BUOYANT STRUCTURE AND INVESTIGATING HOW LIGHTNESS PROMOTES PERFORMANCE
2. INVESTIGATION WHAT SAIL FORMS BEST HARNESS WIND ENERGY

WOODEN  
STICKS

PAPER

# LESSON 10: BOAT MAKING





# LESSON 10: BOAT MAKING



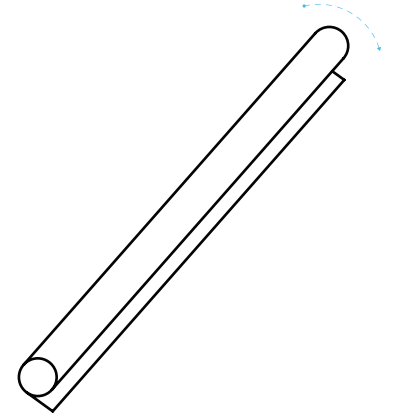
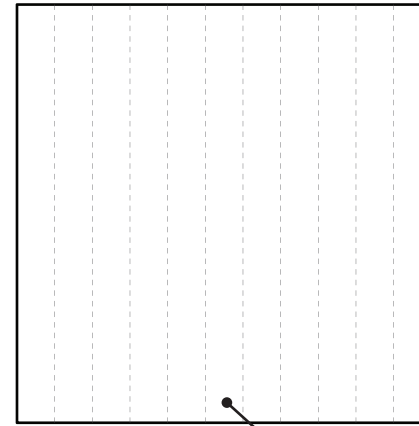
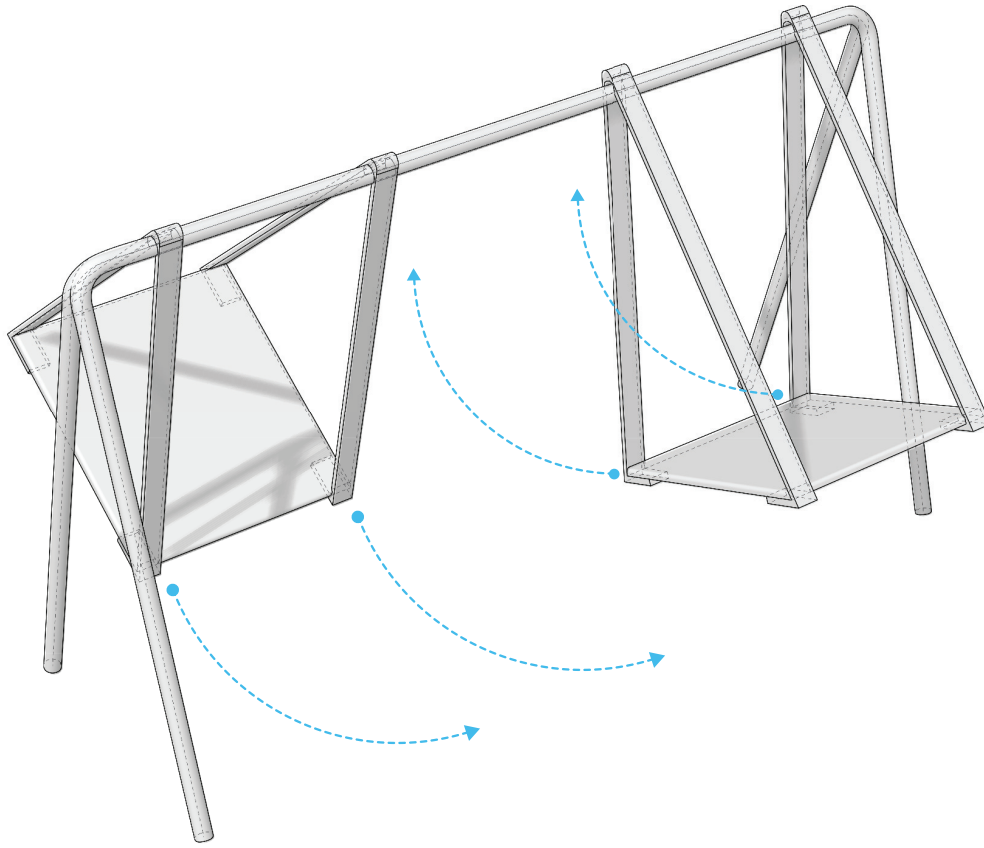


# LESSON 10: BOAT MAKING





# WEEK 11: PLAYGROUND PLANNING



PAPER

## MATERIAL REQUIRED:

1. 3 SHEET OF LETTER PAPER
2. SCOTCH TAPE
3. SCISSORS

## CONCEPT:

1. BUILDING MOVABLE STRUCTURE
2. SUNLIGHT
3. PLAYGROUND PLANNING

## TIME REQUIRED

1hr 30min

# WEEK 11: PLAYGROUND PLANNING

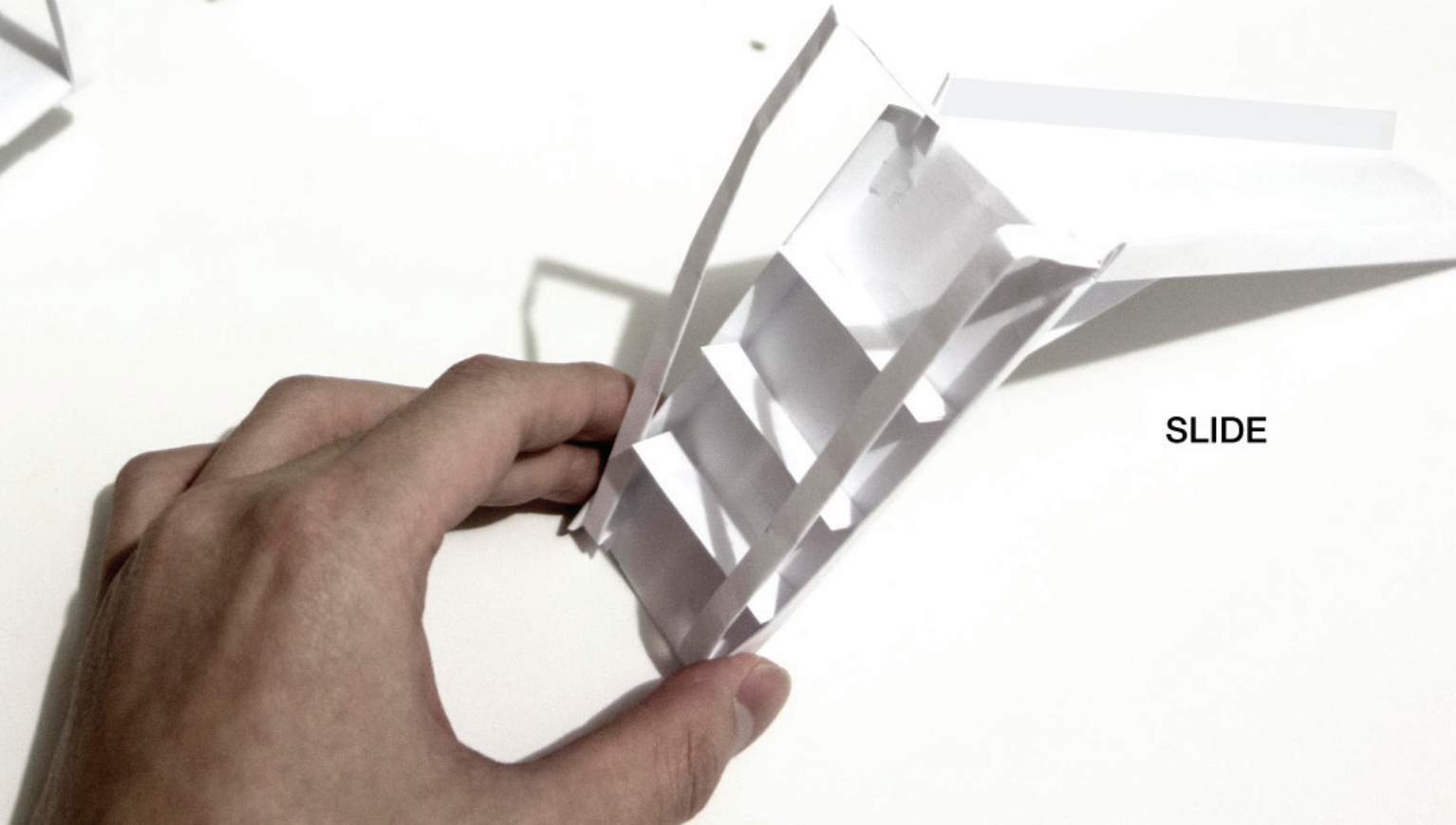
SWING



SPIN



SLIDE





# WEEK 11: PLAYGROUND PLANNING





# CLASS OF SUMMER 2013

