



MAKING SHADOWS WITH

CATAPULT

TRADITIONS (and BREAKING WITH THEM)

Modern Dance

Modern Dance also called Interpretative Dance includes an amazing diversity of styles and formats. Here are some links to examples of Modern Dance. Plan to discuss with your students how different these examples are and also if they can say what they might have in common.

Paul Taylor	BRANDENBURG	https://www.youtube.com/watch?v=uPXAAyUiUGg
MOMIX	PROMO REEL	https://www.youtube.com/watch?v=XynSQXQJmgw
Nacho Duato	GNAWA	https://www.youtube.com/watch?v=wjBtja-kKHY
Elizabeth Streb	LITTLE EASE	https://corvallisreview.blogspot.com/2017/05/dancing-inside-box-six-ways-of-looking.html



1. It is one of only two art forms that were invented
in the United States!

2. Modern dance was born as a kind of rebellion
against ballet and a reflection of the changing times.

. Modern Dance was one of two Art Forms born in America. Can you guess the other art form? Hint: it is a musical form.

Answer: Jazz music

What do these two uniquely American art forms have in common that some would say make them American?

Answer: Both Jazz and Modern Dance place a high value on **innovation** and **improvisation**.

They both use improvisation to spontaneously develop material for new work. At times, dancers and musicians improvise during performances.

Innovation is the act of coming up with new ways of doing things.

Improvisation and Innovation are two things that we Americans are said to be good at.



Do you think that is true? What examples can you give?

What are some examples of famous innovations?

Who comes to mind as a good **improviser**?

If **Whose Line Is It Anyway?** Is an example of theater improvisation, What would Dance Improvisation or Musical Improvisation be like?



Modern dance was born as a kind of rebellion against ballet and a reflection of the changing times.

Rebellions and revolutions aren't limited to those that happen against dictators or oppressive governments – they can happen in all forms of art, culture, fashion and religion. Can you think of a revolution that happened in industry or a rebellion that happened within a religion such as Christianity?

Possible Answers: Industrial Revolution; Reformation

Modern Dance choreographers such as Isadora Duncan, Doris Humphrey and Martha Graham created a new art form that sought things New and Strange and Beautiful. They wanted to be free of the highly stylized dance form

born in the court of Louis the XIV called **ballet**. They took off their shoes, let down their hair and started exploring what kinds of movement a body could do. Modern dance is constantly re-inventing itself and searching for new and unusual ways of moving and expressing. Sometimes modern dance artists push so far into new territory that many people don't believe they are doing "modern dance". That is when many of us prick up our ears and get excited that something new is happening. The new kind of Shadow Dancing that Catapult performs might be an example. But first you need to know about the old kind of Shadow Theater.

Shadow Theater using puppets made of paper or leather has been around for THOUSANDS of years! That's right people in India, China, Thailand and Malaysia and many other places have been using shadows to tell stories since about 3 centuries before the birth of Christ – that would be over two thousand years ago.

How Does It Work? It's pretty simple, really. A light source such as a lantern, candle, flashlight, projector or other is pointed at a semi-translucent screen made of cloth, paper or vinyl. In between the screen and the light source, puppeteers manipulate cut-outs and make them move around and seem to interact. It's a lot like watching a movie and in fact this ancient art form is very likely what eventually led to [projections](#) and eventually to the films we watch today.



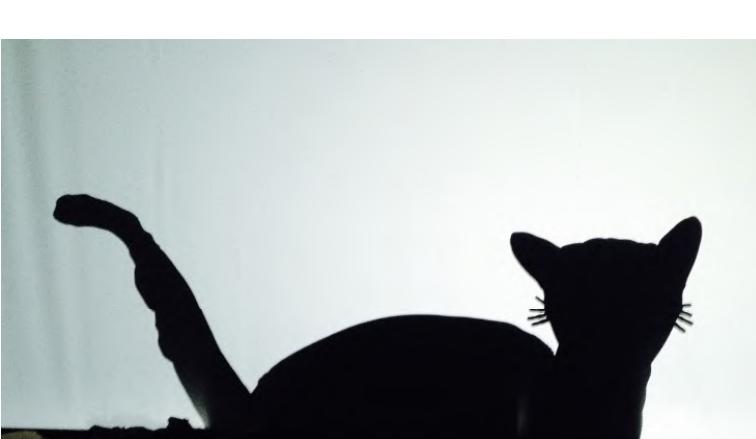
Hand Shadows

Are very interesting too. Here are some easy and some harder ones to try.



depositphotos

Image ID: 143079101 | www.depositphotos.com



We do DANCE both Modern and Ballet; WE do ACT and express emotions; We do use some PUPPETS but most of all we use our entire bodies to make shadow shapes. In fact we often use multiple bodies. We do sometimes use our hands and fingers BUT MOSTLY WE USE HUMAN BODIES! Can you identify which body parts are used to make the Kitty Cat? Can you guess how many people are needed to make this shape? There are no cut-outs used to make this shape.

You can label the picture with body parts and write down your guess as to how many people there are.

WHAT TO LOOK FOR IN OUR SHOW



BALLET: Could you identify the moments of ballet? What kind of music was playing during the moments of ballet?

Activity: Play Classical Music such as Vivaldi's Four Seasons and create simple movements that seem to go with the music. Does it still work to do those same movements with different music such as Rock and Roll? Did your body naturally adapt to the new music? How did the movement change when you changed the music? What hap-



SCULPTURE: Making shapes with our bodies is kind of like sculpture – The shadow that you see is 2 dimensional like a painting. Is creating shadows more like sculpting or painting? What do you think?

Activity: Make a sculpture out of clay of an animal such as a dog or a horse or cat. Tape a piece of paper to the wall. With a partner: one of you shines a flashlight on the shape while the other makes a tracing of the shadow on the paper. What did you discover? Play with the position of the sculpture and the angle of the light. You will notice many changes when you change the relative positions of the sculpture and the light.

ACTING: We don't use words in the show but we still tell stories. How did we do that? Can you describe moments in the show that were more acting than dance?

Activity: Create a list of emotions or attitudes and have students try to embody that emotion or attitude with a body posture or a single gesture. The rest of the class can guess what they are communicating. Keep it simple and as authentic as possible and of course no words allowed.

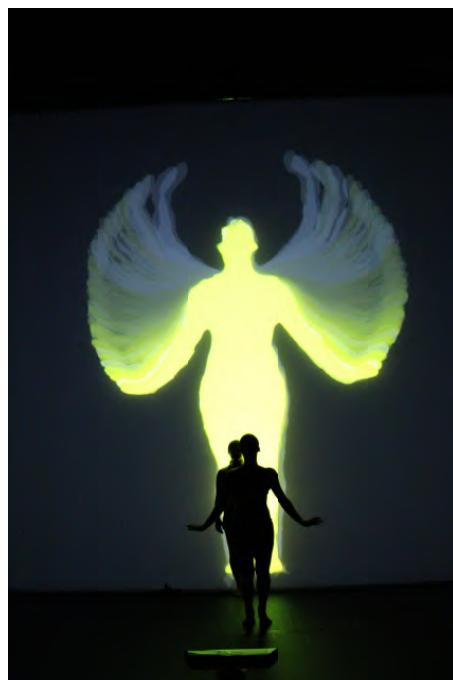


THE SCIENCE OF SHADOWS

For classrooms that would like to use the Catapult show in Science class

WHAT IS LIGHT?

Light is made of energy filled particles called photons. They travel at incredible speed (the speed of light). They hit things and bounce off (reflect) and that allows us to see that thing! Light is made up of many spectrums. In the picture to your right, we used the Infrared spectrum to create the effect that you see on the screen.



WHAT IS A SHADOW?

A shadow is the absence of light. Your own shadow can only exist when your body is being hit by a light source. When light is being blocked by your body, your shadow appears like a cut-out of you! *Where* your shadow appears and *what* it looks like depends upon the kind of light and the angle of light.

Activity:

Students can work in groups. Each group has a flashlight and the lights in the room are dimmed.

One student holds his/her hand with fingers spread a foot above their desk. Another student places him/herself one arm's length distant and shines the flashlight directly above the outstretched hand. It is important to hold the flashlight still.

Observe the position of the shadow (tape paper to the desk and trace the position and outline of the hand with chalk or marker.)

Observe the edges of the shadow are they fuzzy or distinct?

Now slowly move the flashlight farther away by a few inches or a foot and make a new tracing. Then move the flashlight much closer to the hand and make another tracing

What happened? Note your observations.

Now move the flashlight off to one side and point the flashlight at the hand so it is now at an angle. Make a tracing. Move the flashlight to the other side of the hand and do the same

What happened? Note your observations. Can you venture any conclusions?

As the students will discover, shadows change shape, size and distinctness as the angle and proximity of the light source changes.

VOCABULARY LIST

Ballet - A courtly style of dance invented in Italy and was then refined in the court of Louis XIV in the 17th century

Contemporary Dance - Is a fusion genre which incorporates elements of Modern, Ballet, Jazz and Ethnic dance. It was born in the mid 1900s.

Cut – Out - A flat shape cut from cardboard or Foam Core and used to complete a shadow shape or to cast a complete shadow shape.

Visual Distortion - Any change in a shadow caused by a change in the angle of light. Extreme angles of light cause extreme distortions.

Foreshortening - As the angle of an object or body part increases or decreases from 90 degrees (perpendicular to the light source) the object's shadow becomes shorter. In Art foreshortening is a technique to create the illusion of depth in a painting

Improvisation - created spontaneously and without preparation

Innovation - Something new, a new idea or method

Interpretative Dance - Often used as a synonym for modern dance it seeks specifically to translate human emotions, situations, fantasies into dramatic movement.

Modern Dance - Came about in the late 19th century as a rejection of ballet. It reflected the changing environment and was a search for greater freedom of movement

Perpendicular - An intersection of two lines or objects at 90 degrees

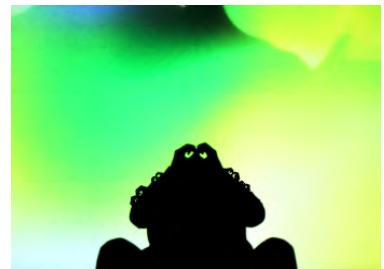
Photon - an elementary particle of light but also any electro-magnetic radiation

Plane - An imaginary flat surface such as the horizontal plane or the vertical plane (called the table plane and the door plane in dance)

Projection - an image projected on a surface such as a wall or screen

Reflection - Light, heat or sound that bounces off of something because it has not been absorbed

Shadow Puppet - a shape or figure cut and painted, designed to be used in shadow theater



CREATIVITY AND SCIENCE COME TOGETHER

Have students brainstorm a short shadow performance incorporating the phenomenon they observed regarding the behavior of light and shadow. The demonstration should be transferred from desk top to a blank spot on a wall so everyone can see. This can be a dance or simply a show and tell of the phenomenon they discovered.

Students talk about ideas, everyone gets their say
They pick some ideas to try and see if they can discover other ideas as a result
Students finalize an order of events and then practice
Students should consider adding music to make it more engaging for their audience.

Note: Students are free to use their hands or objects or to make shadow shapes with their hands. They can scout the room for fun things to use or even make their own cut-outs. If you wanted to give them more time with this activity, you could ask them to create a shadow presentation about a topic you are working on instead of or in addition to writing a paper. Eg. dramatise through shadows one of the most important moments in the book they just read or the moment in history they just studied or even how Pipefish move through their environment. Encourage them to use the techniques they experimented with regarding the behavior of objects and light source in their presentation. Use your imagination and let them use theirs.

