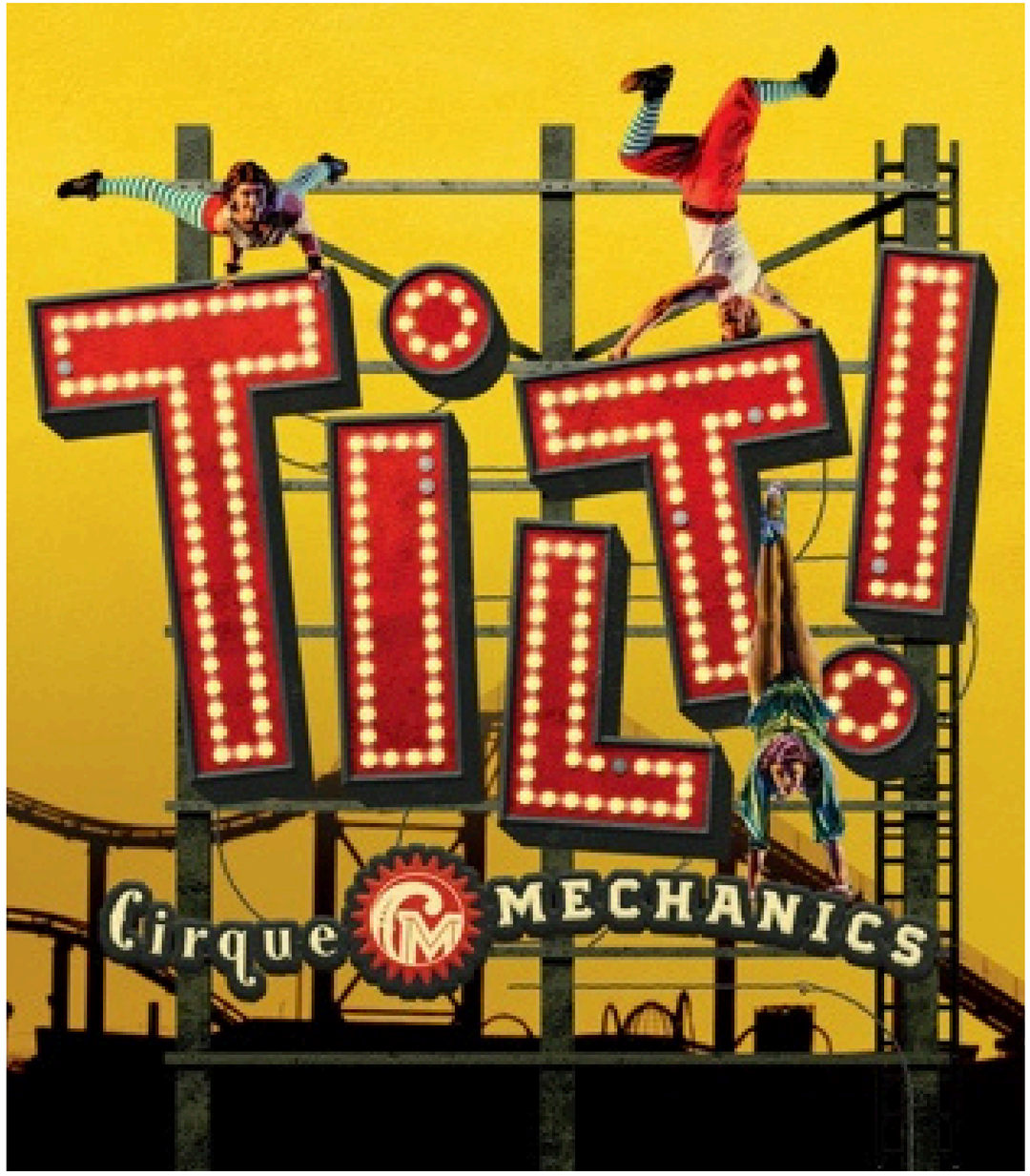
Tilt! A Circus Thrill Ride

Study Guide for Students & Teachers

Presented by Cirque Mechanics



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Welcome Letter

Dear Teachers and Students,

Welcome to Tilt! A Circus Thrill Ride. We are so excited that you will join us on this thrilling journey through amusement park rides, daring circus feats, and the unforgettable culture of the 1980s. At Cirque Mechanics, we believe circus is not just entertainment—it's a way to explore science, history, art, and storytelling all at once.

When we began creating Tilt!, we asked ourselves: What if we could step inside the amusement parks of our childhood? What if the rides, the music, the games, and the colors of the 1980s came alive on stage through circus? The answer became a show powered not by electricity or engines, but by people—artists who flip, balance, fly, and spin to recreate the magic of the rides you know.

This study guide is designed to help you and your students get the most out of the experience. Inside you will find:

Background on circus, amusement parks, and 1980s pop culture
Connections to STEAM (science, technology, engineering, arts, math)
Activities to spark imagination before and after the show
Vocabulary and discussion questions to deepen understanding

We invite you to explore, to ask questions, to think critically, and—most importantly—to let yourself be amazed. Whether you are a teacher guiding a classroom, or a student experiencing live theater for the first time,

Tilt! is meant to inspire curiosity and creativity.
Enjoy the ride!

🎡 The Cirque Mechanics Team

Introduction
The World of Tilt!

Step right up! Imagine walking through the gates of a 1980s amusement park—bright lights flash, music booms from a boombox, kids trade arcade tokens, and friends line up for the Tilt-a-Whirl, Ferris Wheel, and roller coaster. Now imagine all of it—rides, games, music, and snacks—brought to life on stage through circus. That's the world of Tilt!

- **An Amusement Park on Stage –** The stage transforms into a living, human-powered carnival. Instead of electricity, the rides move by muscle and momentum—performed by world-class acrobats.
- **A Circus Story Without Words –** Through movement, music, and spectacle, Tilt! tells a story of community, friendship, and fun.
- **A Celebration of the 1980s –** From the props (Walkman, Polaroid camera, fanny pack) to the sounds (synth beats, arcade noises), the show is an homage to the pop culture of the decade.
- **An Educational Playground –** Behind the thrills lie lessons in physics, engineering, history, and theater.

Just like an amusement park ride, Tilt! is full of surprises, ups and downs, spins and twists. But unlike a roller coaster, this ride takes place on a stage, powered by the imagination and strength of human performers.

Think About It

Why do you think the creators of Tilt! chose to make the rides man-powered instead of mechanical? What message might that send about human creativity and teamwork?

What You Will See on Stage

When you take your seat and the lights go down, the stage transforms into a vibrant amusement park of the 1980s. Instead of engines and electricity, everything is powered by people—acrobats, athletes, and artists who make the rides spin, swing, and soar.

Here's a sneak peek of some of the acts and machines you'll see:

The Ferris Wheel

A giant, human-powered wheel dominates the stage. Performers climb, balance, and spin inside it, using their bodies to turn the structure.

Just like the iconic ride invented for the 1893 World's Fair, this Ferris Wheel is both a spectacle and a symbol of imagination

The Teeter Board

Imagine a seesaw turned into a launch pad! Acrobat "flyers" jump on one end, launching their partners high into the air.

You'll see flips, twists, and landings that combine playground fun with circus daring.

The Roller Coaster

Curving tracks and ramps become the setting for breathtaking balancing acts, slides, and group acrobatics.

Instead of cars on tracks, it's performers' bodies racing, climbing, and tumbling.

The Swing Ride

Aerialists fly through the air, lifted by pulleys and partners, creating the thrill of swinging high above the ground.

Everyday Park Props, Transformed

Benches, trash bins, ticket booths, and light poles become performance machines. Each object has a hidden purpose—part playground, part stage magic.

Clowns & Characters

Just like at the fair, you'll meet colorful characters. Instead of speaking, they use movement, comedy, and facial expressions to tell the story.

Watch For!

How many times can you spot the performers turning into the "rides" themselves?
Which act reminds you most of your favorite carnival ride?

Design Highlights

The stage design for Tilt! is like stepping into a time machine that takes you straight to the summer of 1986. The world feels familiar—rides, booths, bright colors—but with a circus twist.

- **The Ferris Wheel:** A giant circle structure is the centerpiece of the show. Unlike a theme park, it has no motors—just human energy.
- **Roller Coaster Tracks:** Curved ramps and rails double as platforms for balancing, acrobatics, and slides.
- **Props as Machines:** Trash cans, benches, even a snack cart transform into circus equipment. Nothing is just what it seems.
- **Lighting & Color:** Neon pinks, electric blues, and bold yellows recall the fashion and graphics of the 1980s.

Inspiration

The creators studied real amusement park rides—Tilt-a-Whirls, Zippers, Loop-O-Planes—and asked: How can circus performers become these rides? The answer came through engineering unique machines, each designed to move in surprising, human-powered ways.

Fun Fact: The Cirque Mechanics team is known for designing custom "performance machines." For previous shows, they created a giant pedal-driven gantry crane (Birdhouse Factory) and a 20-foot windmill (Zephyr). Tilt! is their biggest playground yet!

Teacher Tip

Have students draw their own "human-powered ride" before or after the show. What simple machine could make it work? (Lever? Pulley? Wheel & axle?)

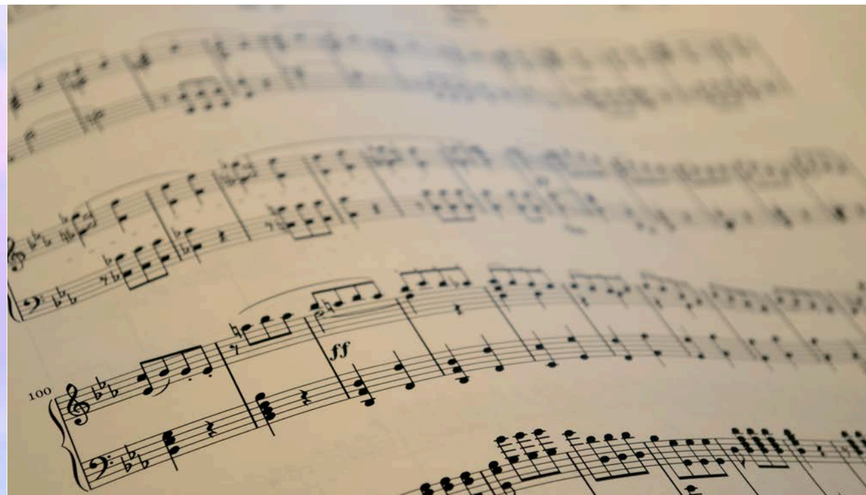
What You Will Hear on Stage

The Music of the 80's

Synthesizers & Drum Machines: The soundtrack pulses with the electronic sounds that defined the decade.

Pop & Rock Influences: From arena anthems to arcade bleeps, the music instantly transports audiences back in time.

Original Score: Composers created music unique to Tilt!, inspired by—but not copying—1980s hits.



What You Will Hear on Stage

Classic ’80s Props with Sound

The Boombox: The show features performers carrying giant cassette-playing radios—the original “portable speaker.”

Walkman: With headphones on, a performer is lost in their own soundtrack, reminding us how personal music became in the ’80s.

Arcade Sounds: The familiar “ping, zap, and ding” of arcade games appear in the sound design.

The History of Amusement Parks

Amusement parks have always been places where people go to escape everyday life. The smell of popcorn, the music of the carousel, the thrill of a roller coaster—all of it was designed to make visitors feel transported into a world of fun.

Early Roots: The Pleasure Gardens

- In the 1600s, Europe had Pleasure Gardens, large outdoor parks filled with flowers, music, food, and dancing.
- Families came to walk in the gardens and enjoy live performances. These gardens were the ancestors of modern amusement parks.

America's First Parks

- In the 1800s, U.S. cities built parks near rivers and seaside resorts. Soon, rides and sideshows were added to keep people entertained.
- Coney Island, New York, became the most famous of these. In the late 1800s and early 1900s, it had roller coasters, sideshows, arcades, and foods like hot dogs and cotton candy.

The Ferris Wheel: A World's Fair Wonder

- In 1893, engineer George Ferris unveiled a 264-foot-tall rotating wheel at the Chicago World's Fair.
- It was the first time people experienced being lifted high into the sky in this way. It became the symbol of amusement parks worldwide.

20th Century Growth

- By the mid-1900s, amusement parks were everywhere—from county fairs to big theme parks like Disneyland (opened in 1955).
- Parks became cultural landmarks where families made memories.

The 1980s: Peak Amusement Park Era

- By the 1980s, amusement parks were booming across the U.S.
- Parks featured bright neon colors, arcade games, water slides, and extreme roller coasters.
- They became symbols of summer vacation and youth culture—exactly the world recreated in Tilt!

Classroom Connection

Ask students: How do today's amusement parks compare to the ones of 100 years ago? What rides, foods, or games have stayed the same? Which ones are brand new?

Arts and Culture of the 1980's

To understand Tilt!, it helps to step into the shoes of kids and families living in the 1980s. This decade was filled with bold colors, new inventions, and pop culture that still influences us today.

Fashion

- Bright colors, neon patterns, and bold shapes.
- Accessories like scrunchies, leg warmers, and fanny packs were must-haves.
- People weren't afraid to "stand out."

Technology

- No smartphones, no internet. If you wanted to call someone, you used a landline.
- Music became portable for the first time with the Sony Walkman.
- Video arcades were popular hangouts—kids lined up with quarters to play Pac-Man or Donkey Kong.

Entertainment

- Movies like Back to the Future and E.T. filled theaters.
- TV shows like The A-Team and Knight Rider shaped pop culture.
- Music was dominated by stars like Michael Jackson, Madonna, and Prince.

Everyday Life

- Kids rode bikes to meet friends instead of texting.
- If you wanted to find your way somewhere, you used a paper map—not GPS.
- Cameras used film, so you had to wait to see your photos!

Why the 1980s for Tilt!?

The 1980s amusement park was the perfect mix of innocence, thrill, and nostalgia. It was a place where kids could roam free, parents could relax, and everyone shared in the excitement. That sense of wonder is exactly what Tilt! aims to bring back.

Think About It
What do you think kids today would find the most surprising about life in the 1980s?

Spotlight: 1980s Props & How They've Changed

Props and objects are an important part of Tilt!'s s torytelling. Each prop is chosen not just for how it looks, but for the history and culture it represents. Here are some classics you'll spot in the show—and how they've changed in today's world.

The Boombox

1980s: A giant portable radio/cassette player. People carried them on their shoulders to blast music in parks and streets.

Today: Music is streamed on tiny wireless earbuds or Bluetooth speakers.

Fun Fact: The word "mixtape" came from people recording their favorite songs onto cassette tapes.

The Amusement Park Map

1980s: Paper maps were handed out at the entrance. You unfolded them to find rides, games, and food stands.

Today: Most parks use smartphone apps with GPS, wait times, and digital maps.

Fun Fact: Getting lost in a park was easier in the 1980s—no "find my friends" app existed!

The Skateboard

1980s: Skateboarding exploded in popularity, especially in California. Boards were smaller and less high-tech than today's versions.

Today: Skateboarding is an Olympic sport with advanced boards and international competitions.

Fun Fact: Many skateboarding tricks invented in the 1980s are still used today.

The Walkman

1980s: A cassette-playing device with headphones. It was the first way to bring your personal playlist with you.

Today: Streaming apps like Spotify let you carry millions of songs in your pocket.

Fun Fact: Walkmans were such a big deal that over 400 million were sold worldwide!

The Polaroid Camera

1980s: Took instant photos that printed on the spot. You shook the picture while it developed.

Today: Phone cameras can take unlimited photos instantly. Polaroids still exist, but as a “retro” novelty.

Fun Fact: The phrase “shake it like a Polaroid picture” comes from this tradition—even though shaking wasn’t necessary!

The Fanny Pack

1980s: A belt with a pouch, worn around the waist. Popular for holding snacks, tickets, and quarters for arcade games.

Today: Fanny packs made a comeback—often worn across the chest as a “sling bag.”

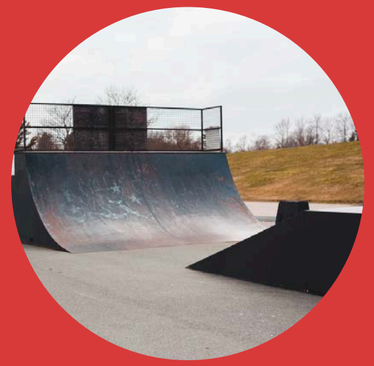
Fun Fact: In Britain, they’re called “bum bags.”

Classroom Activity

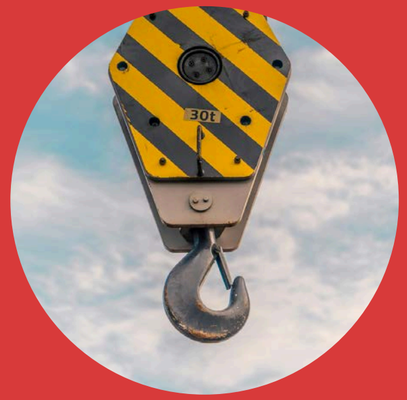
Bring in or show pictures of these props. Ask students: Which one would you most want to use? Which one feels the most outdated?

Simple Machines on Stage

A simple machine is a tool that makes work easier by changing the direction or strength of a force. Amusement park rides—and circus acts—use them all the time.



Term	Definition	As Seen in Tilt!
Wheel & Axle	A wheel attached to a central rod to help move objects more easily	Ferris Wheel, Tilt-A-Whirl, spinning plates
Pulley	A wheel with a rope or belt that lifts or moves objects	Swing Ride aerial lifts, aerial rigging
Lever	A rigid bar that pivots to lift or move something	Teeter Board act
Inclined Plane	A sloped surface to move objects up or down	Skateboard ramps, slides
Screw	A spiral-shaped tool to hold or lift objects	Hidden in ride assembly, props, and stage machinery
Wedge	A shape that splits, lifts, or secures objects	Tools, stage set assembly, props



Classroom Challenge

Build a mini “human-powered ride” using three simple machines. Which ones make the ride safest? Which ones make it most thrilling?

Forces and Motion

Physics is everywhere in Tilt! Performers use Newton's Laws to flip, fly, and spin:

NEWTON'S FIRST LAW - INERTIA

- Objects stay still or keep moving unless a force changes them.
- Tilt! Example: A juggling ball keeps flying until it's caught.

NEWTON'S SECOND LAW – FORCE = MASS × ACCELERATION

- Heavier or faster-moving objects need more force to move.
- Tilt! Example: Acrobats launch a flyer using calculated force on the Teeter Board.

NEWTON'S THIRD LAW – ACTION & REACTION

- Every action has an equal and opposite reaction.
- Tilt! Example: When a performer pushes down on a trampoline, they are launched upward.

Circus Physics in Action

CENTRIPETAL FORCE THE FORCE THAT PULLS OBJECTS TOWARD THE CENTER OF A CIRCLE.

- Keeps riders on the Ferris Wheel or Tilt-A-Whirl.

MOMENTUM – HOW MUCH MOTION AN OBJECT HAS; HARDER TO STOP A ROLLING BOWLING BALL THAN A TENNIS BALL.

- Helps jugglers and tumblers maintain motion.

TORQUE – A TWISTING FORCE THAT MAKES OBJECTS ROTATE.

- Powers spin tricks and aerial rotations.

FRICTION – A FORCE THAT SLOWS MOVEMENT.

- Useful for safety and controlling props, but slows juggling or spinning tricks.

Think About It

Which acts on stage show friction, torque, or momentum in the most exciting way?

Theater & Language Arts

Tilt! is not only a science show—it's a storytelling experience. It blends circus, theater, and dance to tell a story without words.

Storytelling Without Words

Physical Theater is a form of acting that uses the body, face, and movement to communicate:

- Emotions, ideas, and story are expressed through posture, gestures, and motion.
- No dialogue is used, but the story is clear through performers' actions.

Tilt! Examples:

- Bravery: Wide eyes, tall posture, confident leaps.
- Fear or hesitation: Hunched shoulders, careful steps, hesitant movements.
- Joy and silliness: Spins, jumps, and playful interactions.

Classroom Activity

Have students act out an emotion or action without speaking. Can their classmates guess the story?

Clowns are the comic storytellers of Tilt!

- Using facial expressions, props, and exaggerated movements.
- Inspired by Marcel Marceau and Charlie Chaplin, masters of mime and physical comedy.

Fun Fact: Physical comedy can communicate more universally than words—it works across cultures and languages.
Clowning and Character

Figurative Language in Theater

Words on the page become vivid images in the mind when paired with movement:

Term	Meaning	Tilt! Example
Simile	Comparison using “like” or “as”	“They twirled like cassette ribbons caught in a fan.”
Metaphor	Direct comparison	“Her heart was a spinning ride—thrilling, dizzying, and loud.”
Hyperbole	Exaggeration for effect	“After riding the roller coaster, my heart was pounding like a jackhammer.”
Personification	Giving human qualities to non-human things	“The roller coaster roared with laughter as it took its plunge.”

Writing Challenge

Create your own simile or metaphor inspired by a Tilt! moment.

Symbols, Themes, & Music

Tilt! uses props, rides, and movement as symbols

Examples:

- The Tilt platform = life's chaos, ups and downs.
- Ferris Wheel = hope and perspective.
- Cradle act = trust and teamwork.

Themes in Tilt!

- Courage to try new things.
- Balancing fun with risk.
- Shared experiences bring people together.

Music: Another Character

Music is central to Tilt!:

- **Diegetic Music:** Characters hear it, like a boombox or ride jingle.
- **Non-Diegetic Music:** Only the audience hears it, like suspenseful or emotional score.

Classroom Connection:

Have students identify moments where music tells the story without words.

CLASSROOM EXTENSIONS & ACTIVITIES

TILT! IS DESIGNED TO BE EDUCATIONAL AND INTERACTIVE. HERE ARE WAYS TEACHERS AND STUDENTS CAN CONNECT THE SHOW TO CLASSROOM LEARNING ACROSS STEAM, LANGUAGE ARTS, AND SOCIAL STUDIES.

Visual & Engineering Activities

.1. Ride Builder Blueprint
- Draw your own amusement park ride.
- Label the simple machines you use (lever, pulley, wheel & axle, etc.).
- Consider: How would you make it safe? How would you make it thrilling?

2. Tilt Timeline
- Create a timeline of amusement park milestones:
  - First Ferris Wheel, first roller coaster, Tilt-A-Whirl invention, Disney World opening.
- Include photos, dates, and fun facts.

3. Mini Models of Simple Machines
- Use classroom materials (cardboard, string, cups) to build ramps, levers, or pulleys.
- Test how well they move objects and explain the physics behind each one.

Language Arts & Creative Writing

1. Metaphor & Symbol Scavenger Hunt
- While watching the show or video clips, students jot down examples of:
  - Figurative language (similes, metaphors, hyperbole)
  - Symbolism (props, rides, costumes representing ideas)

2. Story Writing Prompts
- Write a story set in an abandoned 1980s amusement park.
- Imagine: What rides still work? What sounds and smells remain?
- Include: At least three simple machines in your story and describe how characters interact with them.

3. Reflective Writing
- Which Tilt! ride best represents your own life? Why?
- How do you feel during moments of risk, balance, or teamwork?

Art & Design Activities

1. Park Posters!
- Design vintage 1980s-style posters for a fictional amusement park.
- Include: slogans, mascots, and at least one wild ride inspired by Tilt!

2. Mood Board Collage
- Collect images, fabrics, or objects that show the colors, music, and feel of 1980s parks.
- Discuss: What makes a theme park feel exciting and nostalgic?

Applied STEAM Activities

1. Engineering Challenge: Invent a Human-Powered Ride
- Students design a new ride using three or more simple machines.
- Present your ride to the class with drawings, diagrams, and safety considerations.

2. Forces Demonstration
- Using toy cars, marbles, or ramps, demonstrate:
  - Newton's laws
  - Friction, torque, and momentum
- Compare the experiments to what you saw performers do on stage.

Glossary

Term	Definition	Tilt! Example
Ferris Wheel	A large rotating wheel with seats	Center stage ride lifting performers
Tilt-A-Whirl	Spinning ride that rotates unpredictably	Classic spinning carousel-inspired ride
Boombox	Portable stereo with big speakers	Played 1980s hits on stage
Walkman	Personal cassette player with headphones	Characters carrying music
Skateboard	Flat board with four wheels	Performer movement inspiration
Centripetal Force	Pulls objects toward the center of a circle	Tilt-A-Whirl, Ferris Wheel spinning
Inertia	Objects stay in motion or rest until acted on	Juggling, acrobat balance
Pulley	Wheel with rope used to lift objects	Swing and aerial rigging
Wheel & Axle	Wheel around a rod for easier movement	Ferris Wheel, spinning props
Lever	Bar that pivots to move objects	Teeter Board launch
Inclined Plane	Sloped surface to move objects	Skate ramps, slides
Screw	Spiral tool for fastening or lifting	Stage assembly, ride mechanics
Wedge	Tapered tool to split, lift, or secure	Tools, props, assembly devices
Physical Theater	Storytelling using movement	Entire Tilt! show
Props	Objects used to tell the story	Ice cream cart, ticket booth
Costume	Clothing that shows character or era	1980s park fashion
Torque	Twisting force causing rotation	Spins, aerial tricks
Momentum	Motion of objects based on mass & speed	Tumblers, jugglers

Bibliography & Resources

Amusement Parks & History

- Smithsonian Institution – History of Amusement Parks
- PBS: American Experience: Coney Island

Physics & Engineering

- HowStuffWorks – How Roller Coasters Work
- Britannica Kids – Simple Machines
- TeachEngineering.org – Engineering Design Process

Pop Culture & 1980s Life

- Retrowaste.com – 1980s Pop Culture
- YouTube – Tilt-A-Whirl POV Videos
- Arcade History & Classic Video Games

Circus & Theater

- CircusTalk & CircusSmirkus – Physical Theater & Circus Arts
- Marcel Marceau Biography
- Charlie Chaplin & Slapstick Performance Studies