# Rotating/Pivot Mechanisms Pop-Up Card Template

## *Create Interactive Spinning Elements*

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### 📋 Materials Needed

- **Cardstock** (2-3 pieces)
- **Brad fasteners or paper clips**
- **Compass or string and pencil**
- **Scissors**
- **Ruler**
- **Hole punch** (or sharp pencil point/compass)

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### 🎯 Step-by-Step Instructions

#### Step 1: Create the Base Card

Create a standard folded card with reinforced center area.

#### Step 2: Design Rotating Elements

Draw circles or wheel shapes that will spin (2-3 inches diameter works well).

#### Step 3: Mark Pivot Points

Determine where rotation should occur and mark with a small dot.

#### Step 4: Create Pivot Holes

Use hole punch or sharp pencil to make small holes at marked points.

#### Step 5: Install the Mechanism

Insert brad fastener through rotating element, then through base card.

#### Step 6: Test Movement

Ensure pieces move freely but aren't too loose.

#### Step 7: Add Interactive Details

Create arrows, pointers, or windows that reveal information as the wheel turns.

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## 🎓 Key Learning Concepts

- **Rotational motion and degrees**
- **Circle geometry and radii**
- **Mechanical engineering principles**
- **Cause and effect relationships**

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## 🎨 Creative Applications

### Educational Wheels

- **Color wheels**: Primary and secondary colors
- **Season wheels**: Show changing seasons
- **Time wheels**: Clock faces, day/night cycles
- **Alphabet wheels**: Letter and picture matching

### Interactive Games

- **Spin the wheel**: Decision makers
- **Matching games**: Align symbols or numbers
- **Story wheels**: Create different story combinations
- **Math wheels**: Multiplication or addition facts

### Decorative Elements

- **Flowers**: Petals that open and close
- **Pinwheels**: Spinning windmill effects
- **Gears**: Mechanical-looking designs
- **Mandala patterns**: Rotating geometric designs

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## 🔧 Assembly Tips

- **Hole placement**: Ensure holes are perfectly centered for smooth rotation
- **Brad tightness**: Not too tight (won't turn) or too loose (wobbly)
- **Reinforcement**: Add extra cardstock behind pivot points for durability
- **Clearance**: Make sure rotating elements don't catch on other parts

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## ✅ Success Checklist

- [ ] Base card is sturdy and reinforced
- [ ] Rotating elements spin smoothly
- [ ] Pivot points are secure
- [ ] Interactive details work as intended
- [ ] Card still closes properly
- [ ] All elements are properly aligned

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*Engineering Tip: Test the rotation mechanism before adding decorative elements to ensure everything works perfectly!*