

DE 608: PRODUCT DESIGN – 2

REPORT ON WOODEN TOY DESIGN

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1. Introduction:

India has a splendid tradition and history of wooden toys since 5000 years. Toys are known as the timeless creation which guides children to adulthood. Wooden toy making is part of every state's art and culture in India, but only few place work is most famous and followed as traditional craft from centuries. The toys are made by assembling flat shaped solid wood. Wood is chiseled or carved into desired toy shape. The cutout pieces are finished on a sander, painted and assembled.



The earliest wooden toys date from sometime during the Stone Age (2.9 million years ago-2030 BC) in Africa and were simple models of useful implements such as clubs, axes and bows

as well as dolls, intended to teach children critical survival and family skills and as a secondary intention to entertain them. Egyptian and Grecian cultural studies show evidence of the creation of less practical and more entertaining toys - from basic playthings fashioned by craftspeople for family members to extraordinary artisanal examples commissioned by the wealthier members of society for privileged children. Commercial manufacture of wooden toys on a small scale began during the middle ages in small shops, with industrial manufacture commencing in the 1800's especially in Germany and Northern Europe.

2. Design brief:

Design a push toy for children of age 9-15 months. The design must take inspiration from nature by using Bionics and Biomimetic principles to analyze the movements, physiology of animals and incorporate them in final design.

A toy that mimics the shape/ motion of a creature/object in the nature. Actuation mechanisms are to be introduced to mimic the functions of natural objects like walking, talking, making expressions and exhibiting behavior.

To design a toy that can be mass produced with in affordable cost. Age appropriate toy, Child safe toy (Toxic free materials), Well made (No sharp edges, paint peeling etc..). The toy should be easy to operate and visually approachable. The toy should be able to withstand wear and tear.

3. Literature study:

The following are physical, cognitive, social and emotional changes that occur in children of 9-15 months.



Physical Changes:

- Confident walker
- Adjusts posture as he/she moves
- Follows your gaze
- Dexterity in hands

Cognitive changes:

- Deliberate exploration
- Entertaining him/herself
- Understanding language
- Using deliberate gestures

Social and emotional changes:

- Shows affection (Hugs, smiles, kisses etc...)
- Mimics Actions
- Recognizes familiar faces
- Babbles with inflections of actual languages

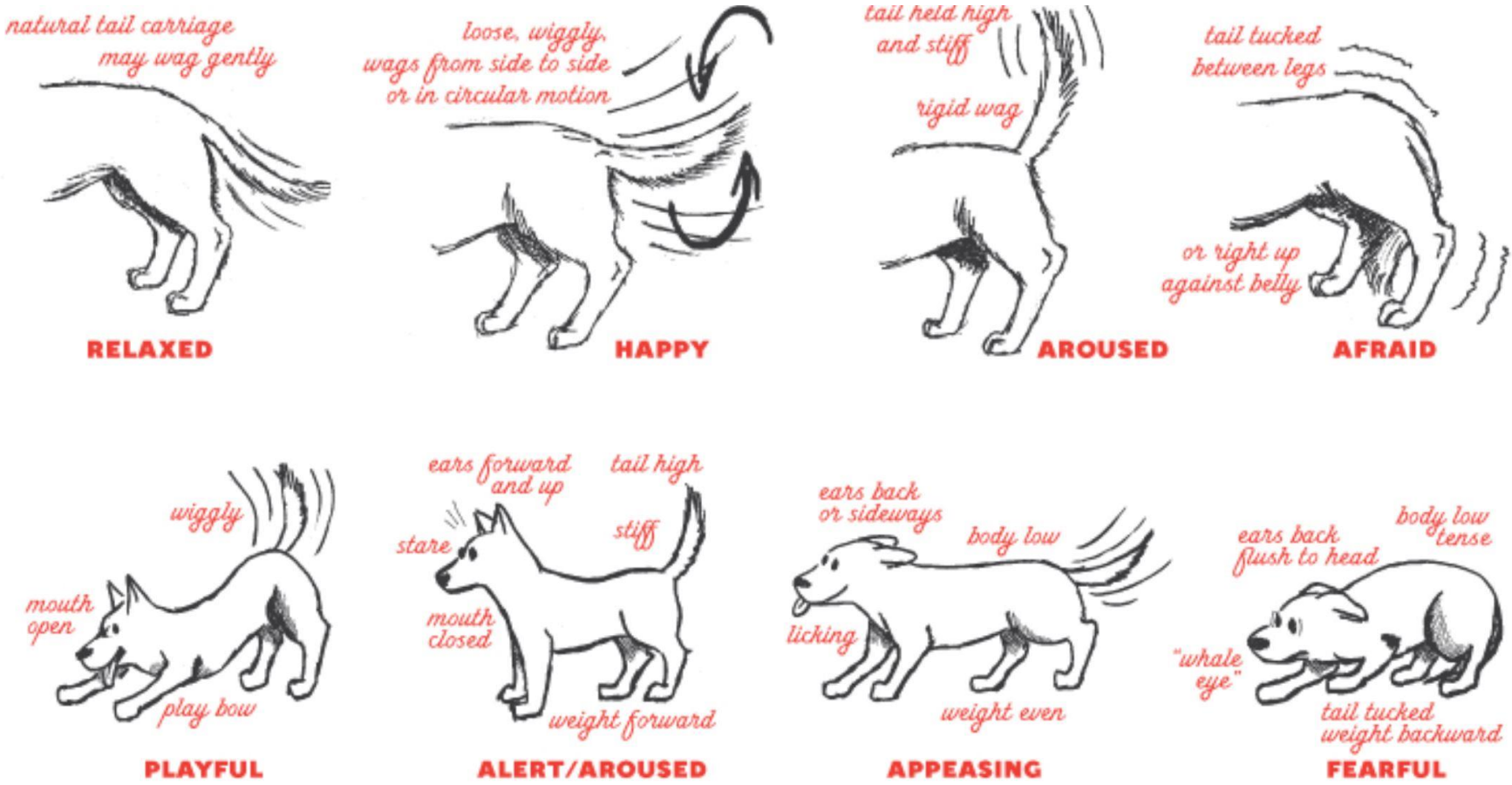
4. Design inspiration:

Dogs are animals, but they have a special place in the hearts of many adults and children. If appropriately trained and supervised, dogs can provide many valuable lessons and other benefits to children.

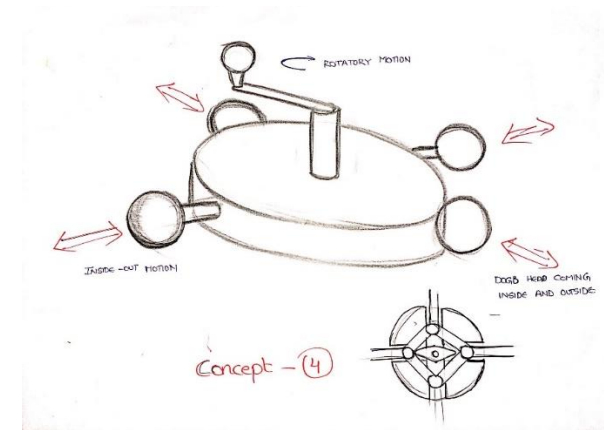
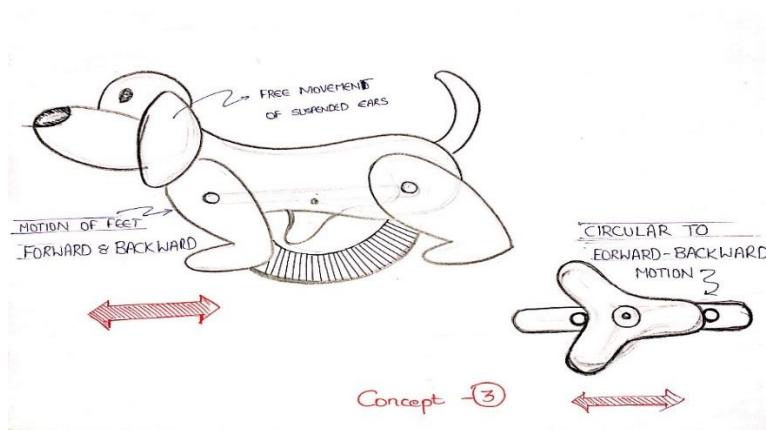
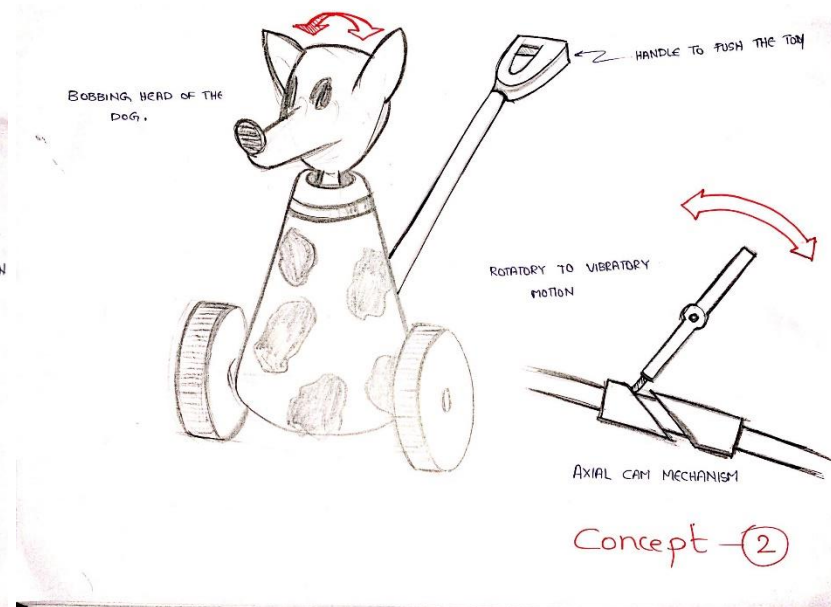
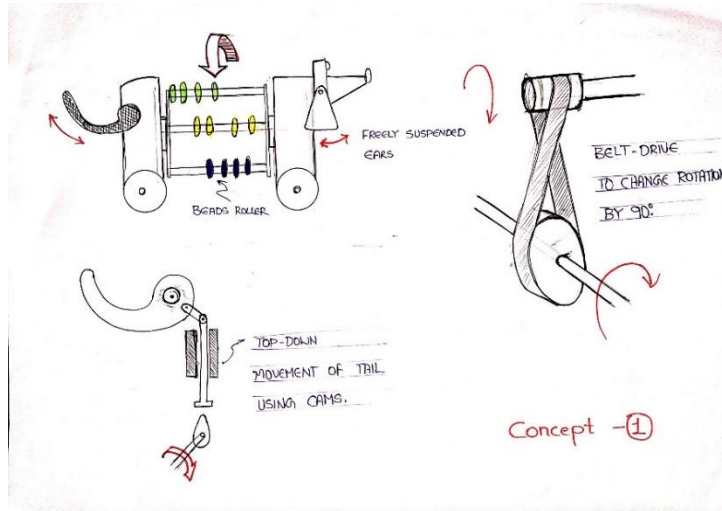


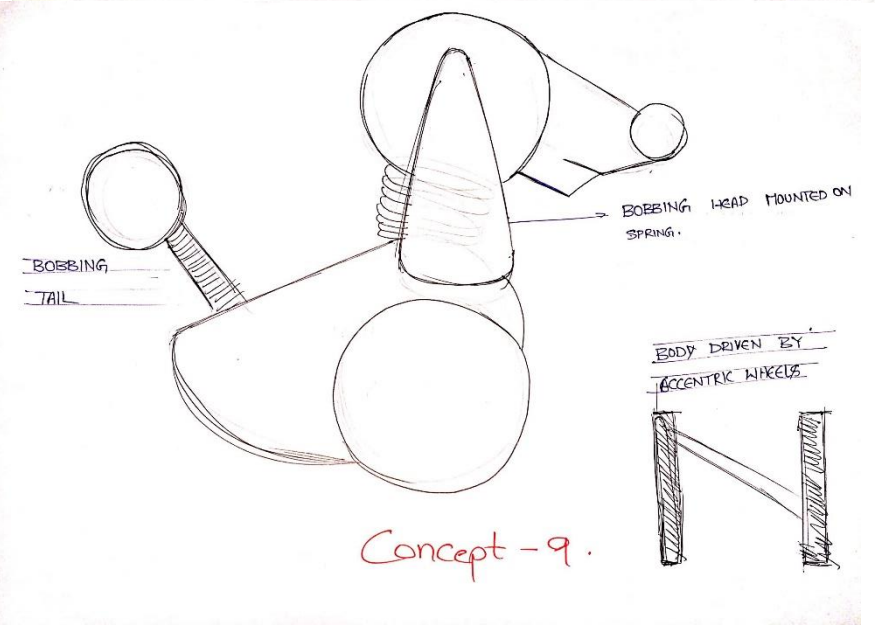
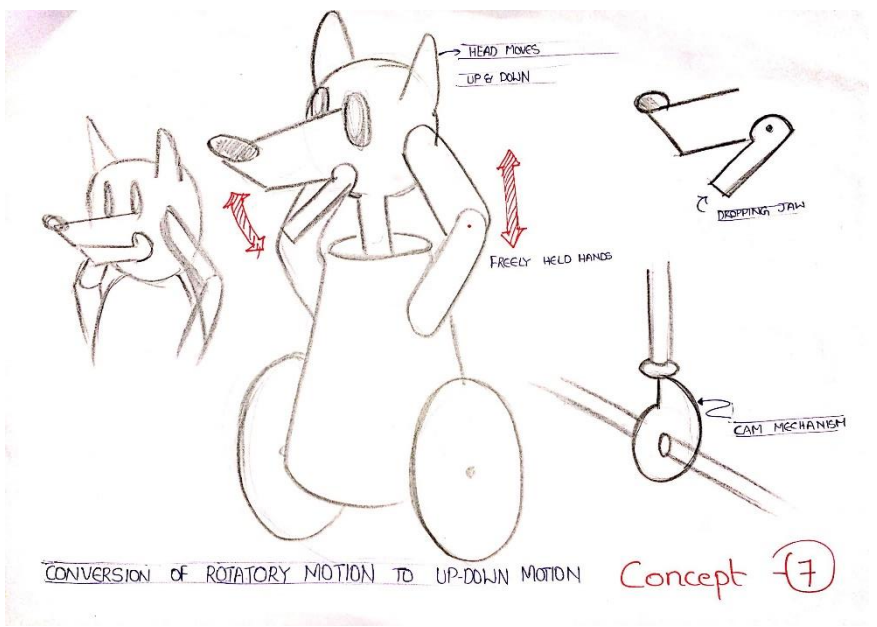
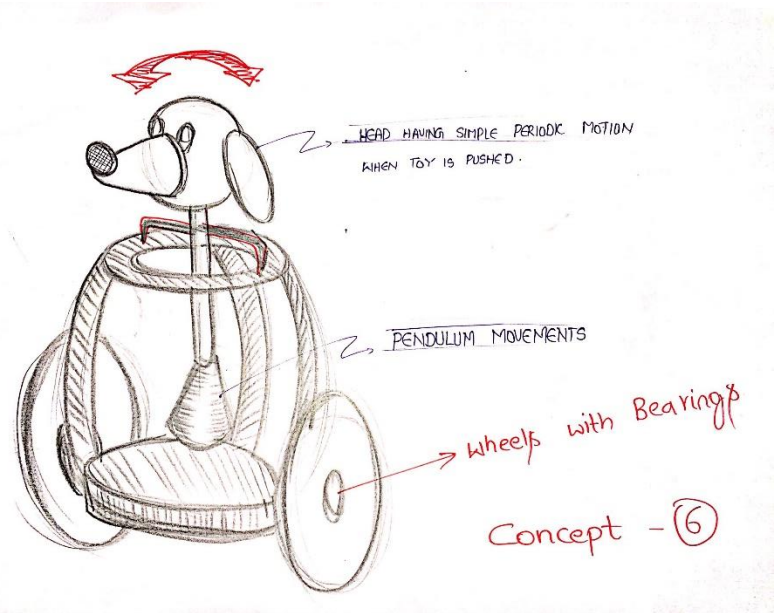
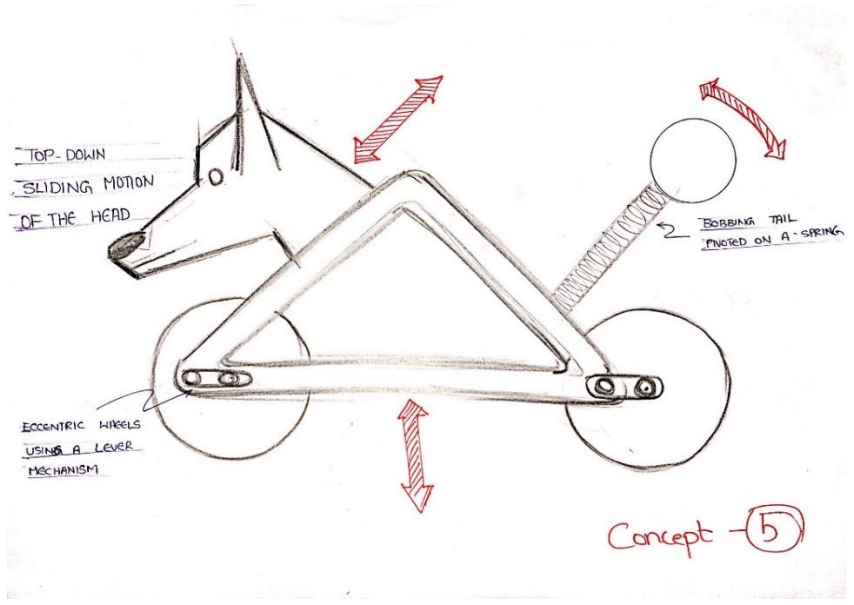
Dogs mood analysis:

Observing the “whole dog” at a distance can give you a quick and general idea of the dog’s mood.

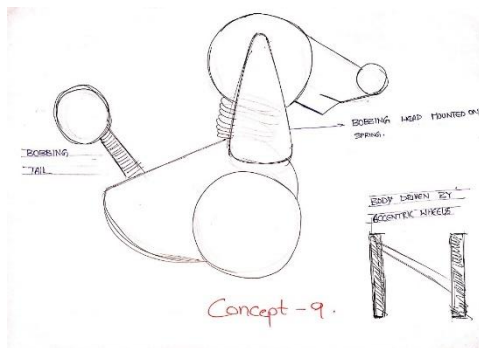
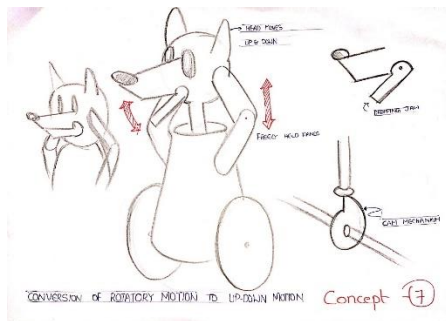
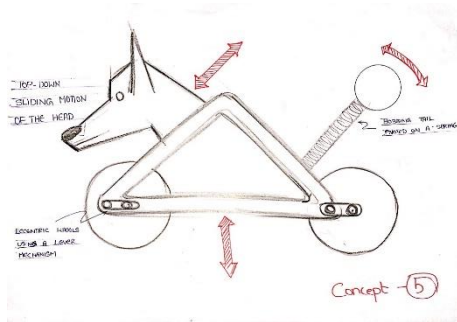


5. Ideation:





6. Concept Evaluation and selection:



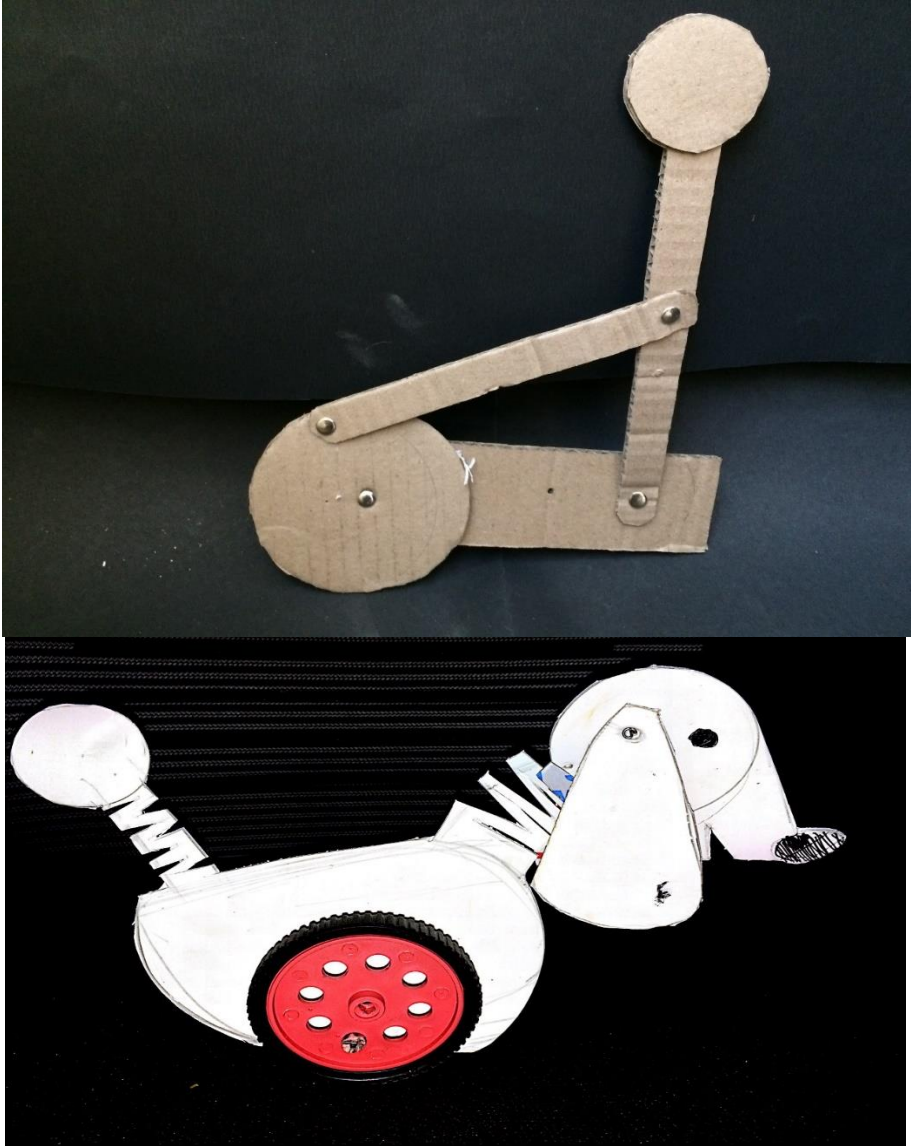
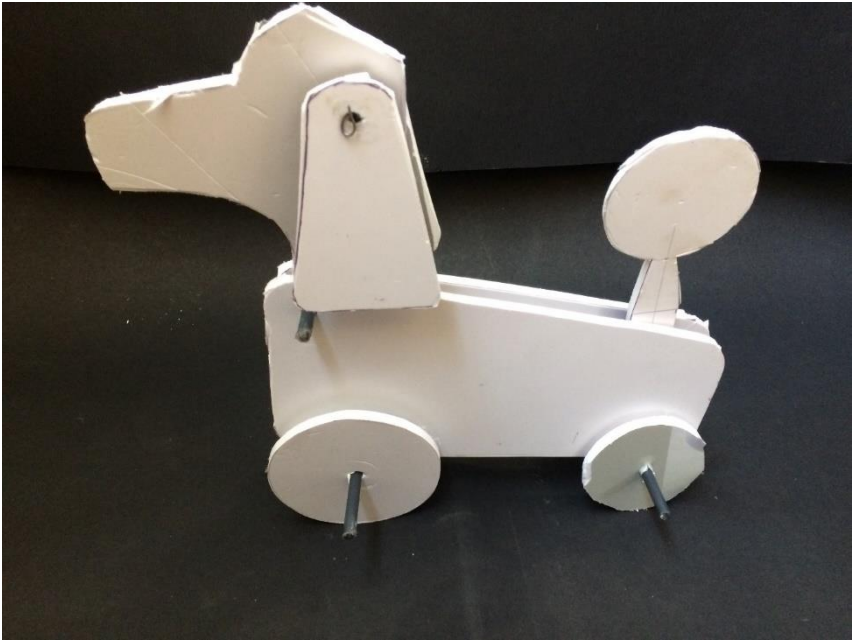
- Head slides forward and backward
- Tail wiggles as toy moves since it is mounted on a spring
- Body has acentric motion due to levers

- Head moves top and down while toy moves
- Mouth opens and closes up while head moves
- Creates an emotion

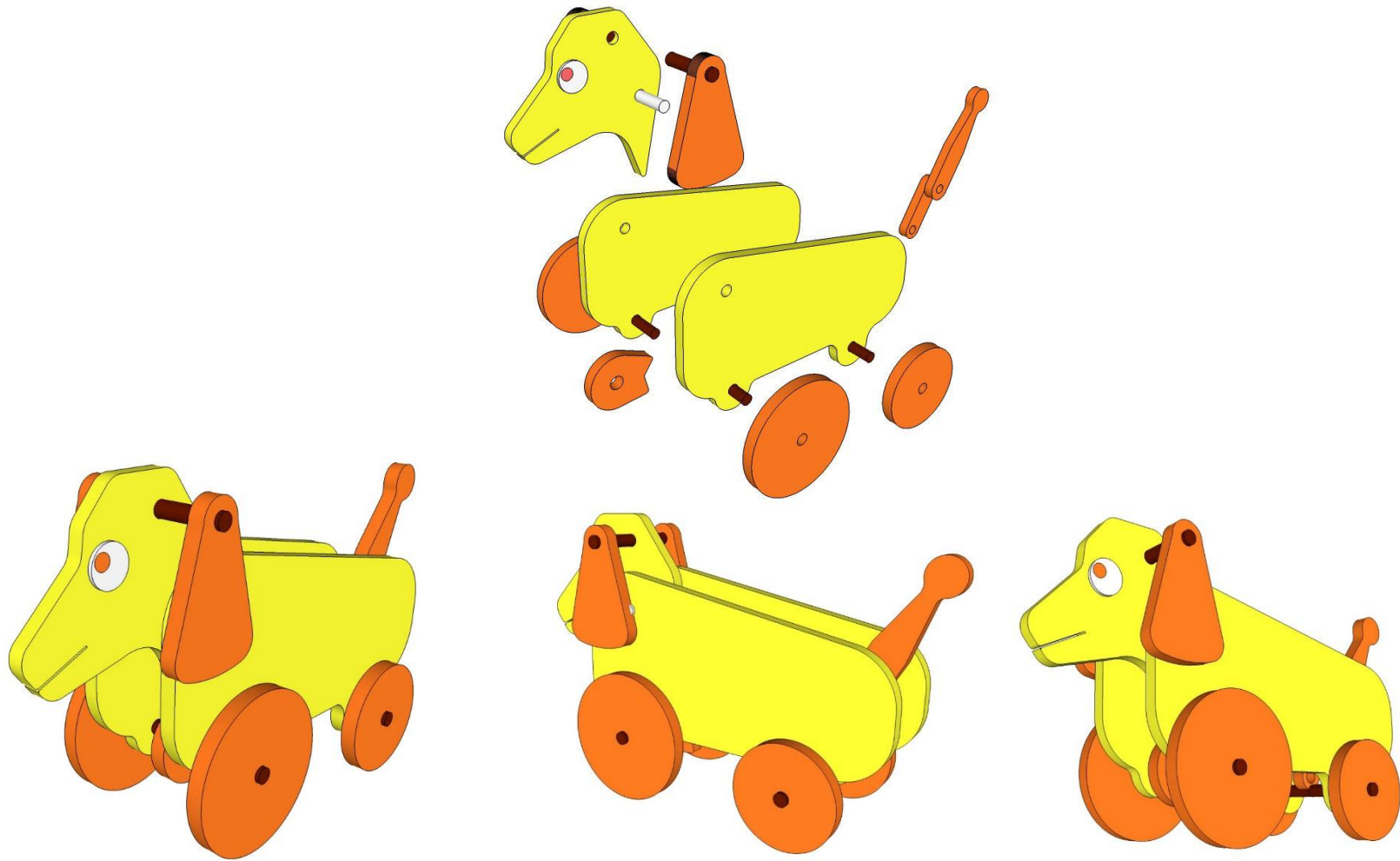
- Bobbing head as toy moves
- Tails wiggles due to acentric movement
- Acentric movement of whole body

Since this concept has movements close to dog's natural movements, it is taken further.

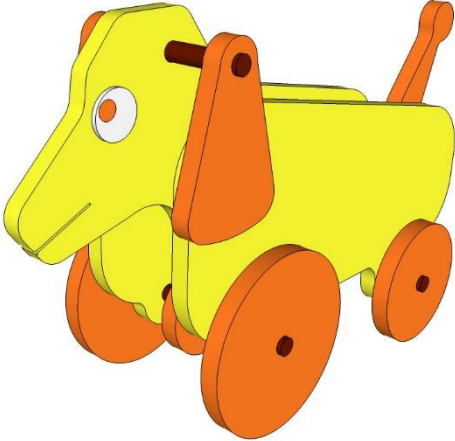
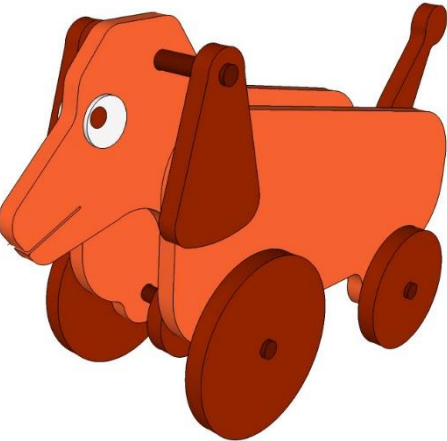
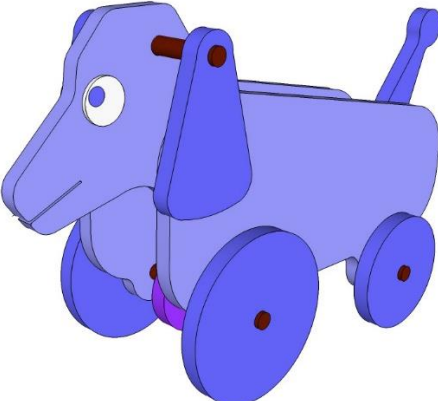
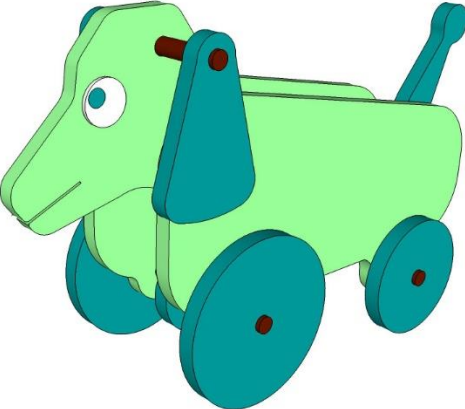
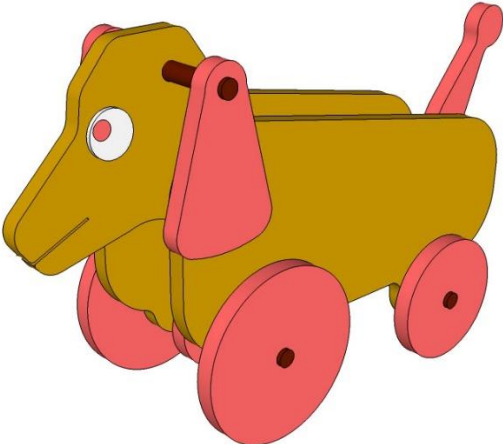
MOCK UP:



7. Final Model

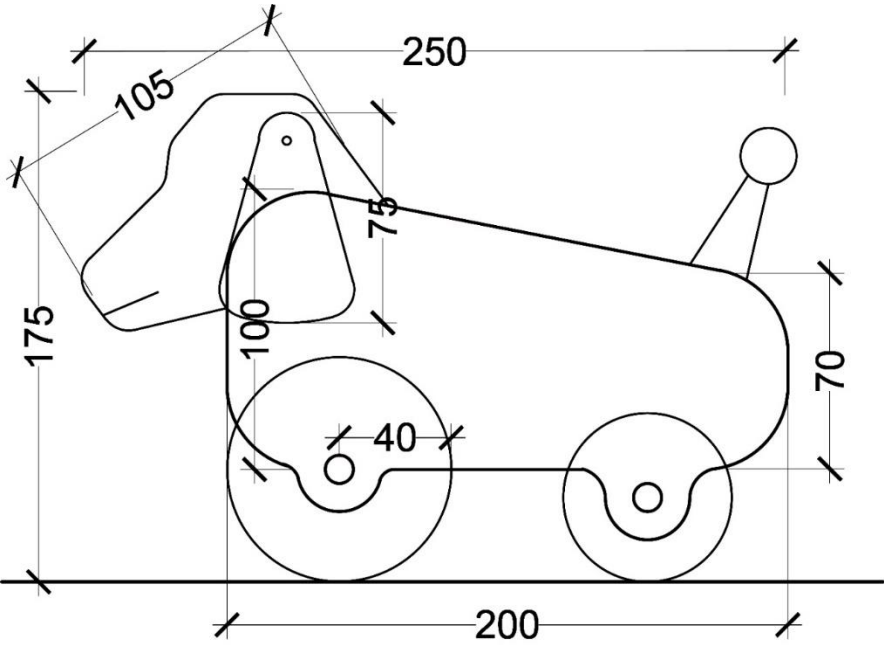
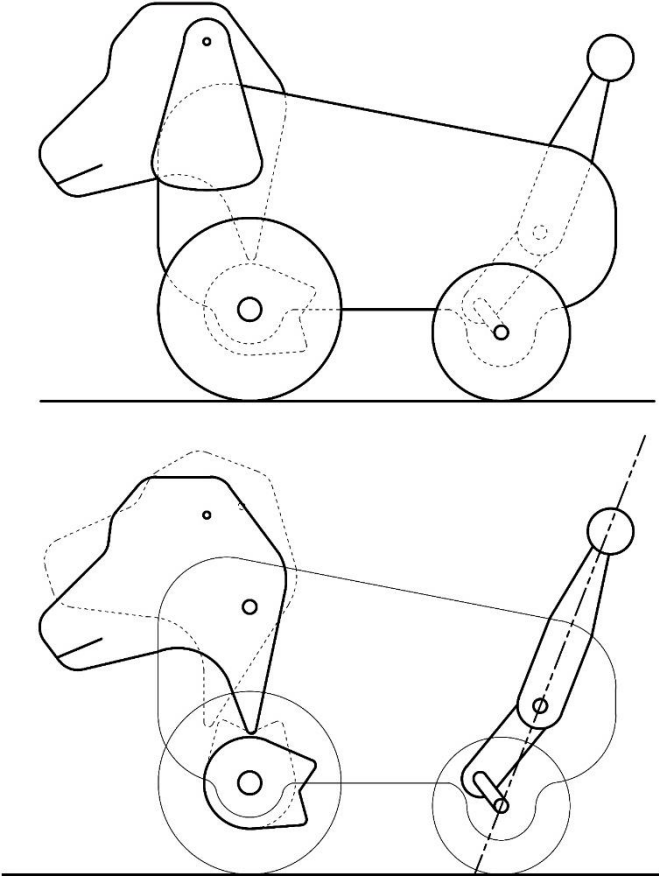


Color variations:



Product dimensions:

All dimensions are in millimeters(mm)



Product Photos:



BILL OF MATERIALS:

MATERIAL: MDF, PVC PIPE, GLUE

MANUFACTURING PROCESS: LASER CUTTING

Branding:

Brand Narrative:

It is the ROXY® philosophy that ‘good quality play’ enriches a child’s life and lays the foundation for later adult life. We believe that play is a key element in children’s growth and development and stimulates the imagination and the emergence of ideas and creative expression. All ROXY products are based on this underlying philosophy of making your child’s life a beautiful experience.



References:

1. Cross, N., Naughton, J. and Walker, D., 1981. Design method and scientific method. *Design studies*, 2(4), pp.195-201.
2. *Research Methods for Product Design*, Alex Milton, Paul Rodgers, Laurence King Publishing, 2013, ISBN 1780673027.
3. <http://www.beautifulbeasties.com/learning-to-speak-dog-part-4-reading-a-dogs-body>