

THE HERITAGE SCHOOL LEARNING EXPEDITION DOCUMENTATION PROJECT

Bicycle

An Expedition into the amazing world of the Bicycle
Invention and the leverage it provides for change
Grade 6

Expedition Designers

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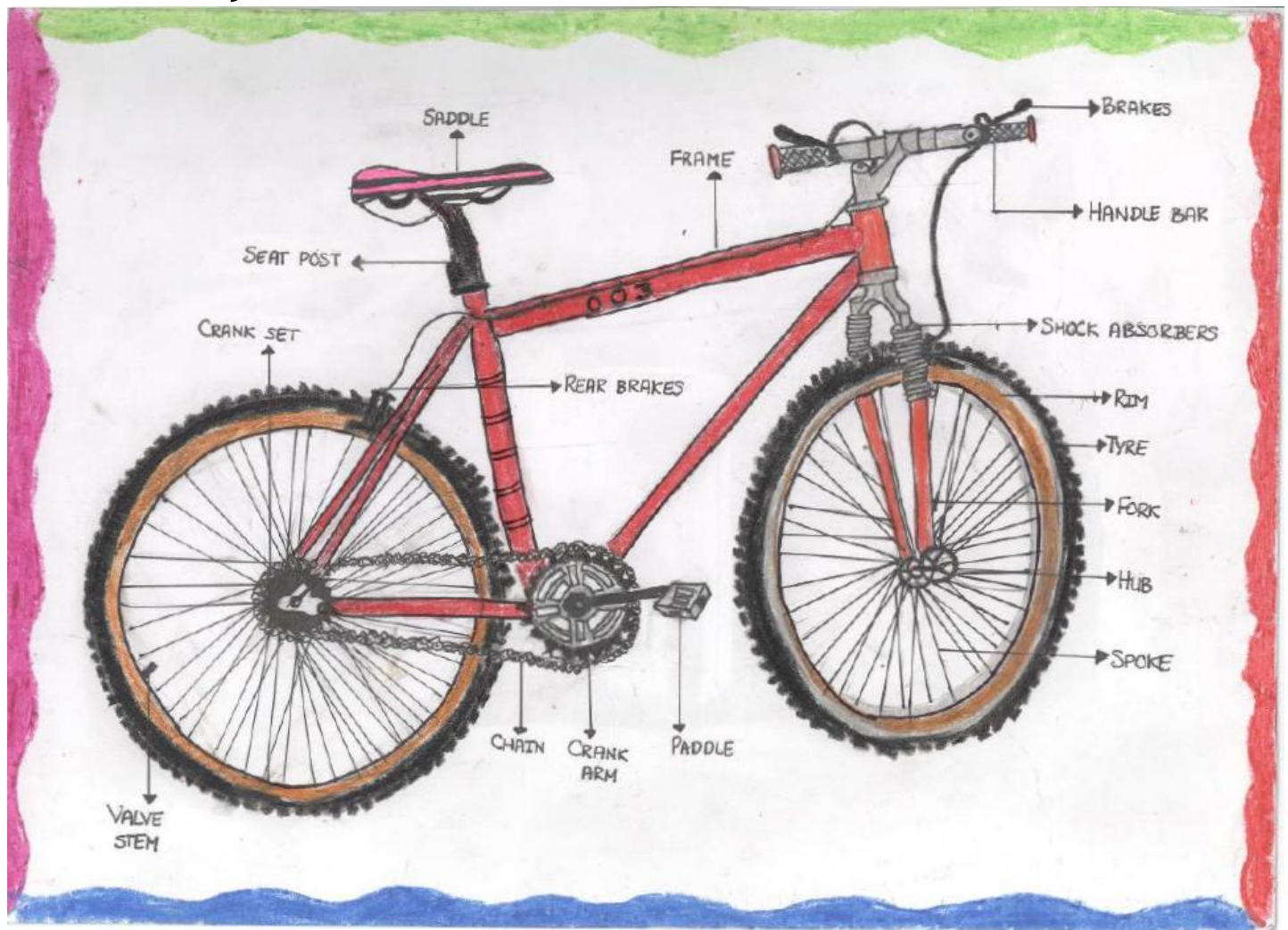
Conceptualised and Designed by Disha India Centre for Experiential Learning

Inspired by Steven Levy, Expeditionary Learning Schools, US



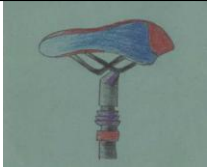
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Summary



The sixth graders of The Heritage School, Gurgaon, with the aim to find out how bike friendly is their city, undertook the Learning Expedition **Bicycle** in the year 2010-11. Along with conducting a mini research on 'Is Gurgaon a Bike Friendly City' they also explored and constructed knowledge around this simple and elegant machine. Through hands on experiences of dismantling and assembling bicycles in the design lab, they studied the different parts and functions of a cycle. Students also delved deep into the history of bicycles to understand how this humble machine has evolved through time with innovations at every step.

As a part of the expedition, they created bike manuals containing a brief about each part of the bicycle along with its functions, maintenance and the safety procedures for bikes. Students also collated and analyzed the data collected from their survey to create a recommendation report on how to make Gurgaon a bike friendly city, which they handed over to the Deputy Commissioner of Police. The Expedition culminated with a Bike Olympics where they spent the day with under privileged children from a village school engaging them in various bicycle games and donated their refurbished cycles to these children.



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Big Idea

People create technology to enhance the quality of life.

Guiding Questions

- How does a bicycle work?
- What does it take to be a bike friendly city? How can Gurgaon become bike friendly?

Focus of the Expedition

Subjects	Concepts/Understanding	Skills	Values
English	Question forms Reading for detail Report Writing Descriptive Writing Invitations Posters	Observation and Recording Designing and Innovation	Respect, Excellence and Inclusion
Science	Types of Motion		
Soical Science	Women Empowerment History of bicycles Discrimination	Data Collection and Analysis	
Math	Ratio and Gears Data Representation		
Visual Art	Sketching a still object	Designing and Asking Questions	

Learning Targets to be addressed in the Expedition

Knowledge and Conceptual Targets	<ul style="list-style-type: none"> • I can explain the functions of different parts of a bicycle. • I can explain the working of a bicycle as a complete system. • I can explain the history and evolution of bicycle with all major inventions and breakthroughs over time. • I can explain why the cycle should be the preferred mode of transportation in future. • I can explain the parameters of a bike friendly city.
Skill Targets	<ul style="list-style-type: none"> • I can sketch the different models of bicycles from origin till date. • I can sketch a bicycle from the angle I am observing. • I can ask questions that invoke curiosity and inquiry in me and my peers. • I can observe and make connections between what I am studying and the real world and try to explain it with my own reasoning.
Craftsmanship and Character Targets	<ul style="list-style-type: none"> • I can redesign/remodel/reinvent a part of the bicycle. • I can make multiple drafts, redesign and rework before I come out with the final product. • I can observe the work of others to learn from it. • I can be an active participant and take initiative in my team. • I can handle tools and raw materials in an effective and respectful manner. • I can clear my work station on time after the completion of a task.



Project 1: Parts of a Bicycle

Project Title : Parts of a Bicycle	Big Ideas/ Broader Concepts/ Key Steps
	<ol style="list-style-type: none">1. Dismantling and Assembling a bicycle Function of different parts Maintenance and Basic repair2. Innovation- Redesign/reinvent/re model a bike part

Learning targets to be addressed

- I can explain the functions of different parts of a bicycle.
- I can explain the working of a bicycle as a complete system.
- I can sketch a bicycle from the angle I am observing.
- I can redesign/remodel/reinvent a part of the bicycle.
- I can observe the work of others to learn from it.
- I can make multiple drafts, redesign and rework before I come out with the final product.
- I can be an active participant and take initiative in my team.
- I can handle tools and raw materials in an effective and respectful manner.
- I can clear my work station on time after the completion of a task.



Project 2: History of Bicycle

Project Title : History of Bicycle	Big Ideas/ Broader Concepts
Case Study: Mariamma of Pudukottai Mukhya mantri Balika Cycle Yojana, Bihar	History, Present and Future of Bicycle Bicycle as a means of transportation
Learning targets to be addressed	
<ul style="list-style-type: none"> • I can explain the history and evolution of bicycle with all major inventions and breakthroughs over time. • I can explain why the cycle should be the preferred mode of transportation in future. • I can sketch the different models of bicycles from origin till date. • I can ask questions that invoke curiosity and inquiry in me and my peers. • 	

Project 3: Bike friendly City

Project Title : Bike friendly City	Big Ideas/ Broader Concepts
Case Study: Documentary movie on Amsterdam Documentary movie on Copenhagen	Parameters of a Bike Friendly City Conducting a survey in Gurgaon Collecting, Collating, Analyzing and Interpreting Data Creating a Recommendation Report
Learning targets to be addressed	
<ul style="list-style-type: none"> • I can explain the parameters of a bike friendly city. • I can observe and make connections between what I am studying and the real world and try to explain it with my own reasoning. • I can make multiple drafts, redesign and rework before I come out with the final product. • I can be an active participant and take initiative in my team. 	



Fieldwork	Visit to different parts of Gurgaon to observe traffic pattern and cyclists on the roads
Experts	Bicycle mechanic
Service learning	Organising Bike Olympics and spending a day engaging under privileged children in bicycle games and donating refurbished bicycles to them



Description of Products

Product	Audience
1. Bike Manuals containing illustrations and a brief description of each part of a bicycle. These manuals also contained details about bike maintenance and safety measures.	Children between the ages of 09 to 15 to help them maintain and repair their own cycles.
2. A recommendation report to make Gurgaon a bike friendly city. The data collected from the survey was collated, interpreted and analyzed to suggest recommendations to make Gurgaon bike friendly. The report included data as well as recommendations.	Deputy Commissioner of Police, Gurgaon



Adapted from the Expedition Overview Document of Expeditionary Learning Schools



The Heritage School, Gurgaon, uses experiential learning as pedagogy for teaching and learning where students work on real life issues, in the real context in order to navigate and understand the world. The idea is to prepare children for life through life. Through its deep engagement with questions about the purpose of education, how children learn and what is worth learning for them, the school community continues to re-invent education, curriculum and pedagogy. The school focuses on developing real understanding and application and has worked towards a child centered approach to teaching and learning.

The Heritage School, Gurgaon and Disha India Centre for Experiential Learning have been working very intensively in making teaching-learning experiential and engaging for the last many years. The Heritage school is a pioneer in designing progressive practices such as experiential based recruitment process, admission process, parent induction, teacher retreats for development of self, whole school visioning exercise, holistic Visual Arts Program etc. in the school education domain.

To know more about the school, visit www.heritageschool.com



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