

MagLev Trains: Magnetism



<https://www.youtube.com/watch?v=alwbrZ4knpg>

1. Did the trains in the video rely on permanent or temporary magnets for levitation and propulsion?

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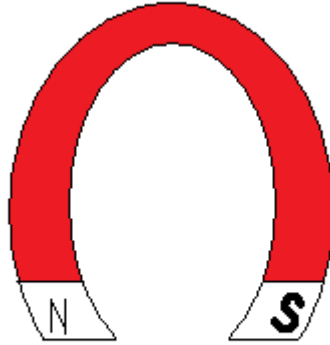
2. What properties of magnets did the German and Japanese engineers use to make their high speed trains levitate (float) above the tracks?

German Engineers (TransRapid)	Japanese Engineers (JRMagLev)

3. How do MagLev trains compare to conventional coal or diesel locomotives. What are some of the advantages and disadvantages of MagLev technology?

Advantages	Disadvantages

4. All magnets produce magnetic fields. For the 3 magnets below draw the field lines and indicate the direction of the magnetic field.



5. The compass is an incredibly old technological use of magnetism. Traditionally the red needle on the compass points north. Why does this work in relation to what we know about magnets?