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| Common  Core Standards | Discovery Education | Manipulative Activities | Graphics/Models | Other Resources |
| Intro to Genetics | DE resources include videos, PowerPoints, lesson plans, interactive labs, visuals, and more.  [Genetic Traits](http://science.discoveryeducation.com/topic.cfm?TID=a6a0cc0a-b242-4681-a77b-3fa25ea17ad1) Lesson Plan  [Laws of inheritance](http://player.discoveryeducation.com/index.cfm?guidAssetId=0C4200E0-0CEC-4A73-8569-A9EF08E03F3F) | [Family Traits Trivia](Genetics/DNARNAtraits/familytraitstrivia.pdf)  [Inventory of My Traits](http://teach.genetics.utah.edu/content/begin/traits/inventory.html) | [What are Genes?](http://www.youtube.com/watch?v=eOvMNOMRRm8&feature=player_embedded#!) | [DPI Heredity Unit](Genetics/DPI_7unitGeneticsMODIFIED.doc) |
| 7.L.2.1  Mitosis – Meiosis  DNA->RNA-> Proteins-> Traits | [Reproduction Asexual vs, Sexual](http://science.discoveryeducation.com/topic.cfm?TID=5d4856c5-afe1-42bd-a86b-2842436e7237) lesson plan  [DE-Sexual Powerpoint](Genetics/Meiosis%20Mitosis/DE_SexualReproduction.ppt)  [DE-Asexual PowerPoint](Genetics/Meiosis%20Mitosis/Asexual%20Sexual%20Cell%20Division.ppt)  [An Introduction to Genes, Genetics, and DNA](http://player.discoveryeducation.com/index.cfm?guidAssetId=81B5BE7E-8BAA-41F2-A708-A53D7FB1F48B&blnFromSearch=1&productcode=DSC)  [Genes, Proteins, and DNA](http://player.discoveryeducation.com/index.cfm?guidAssetId=808CA0BE-40CD-4C62-B114-71AD5747C391&blnFromSearch=1&productcode=DSC)  [Genes are located on chromosomes](http://player.discoveryeducation.com/index.cfm?guidAssetId=2C9DEC29-AB40-49FF-825D-1CB5EFC9474D)  [Genes, Genetics, and DNA: A Review](http://player.discoveryeducation.com/index.cfm?guidAssetId=00F1DB2E-B615-467B-B7AC-16F2AD7CA601&blnFromSearch=1&productcode=DSC)  Interactive: [Genes: The Blueprint of Life](http://player.discoveryeducation.com/index.cfm?guidAssetId=6DB5BD55-2A9C-49BD-9841-07F0B5951D68&blnFromSearch=1&productcode=DSC)  [The Power of Genes](http://player.discoveryeducation.com/index.cfm?guidAssetId=07A05A64-37F3-429D-8D5C-4E70A20092BA&blnFromSearch=1&productcode=DSCE)  [Genes and You](http://player.discoveryeducation.com/index.cfm?guidAssetId=C54C452A-AADA-42B1-AA19-4F3F4A595BD7&blnFromSearch=1&productcode=US) | [DNA Wheat Germ Demonstration](http://learn.genetics.utah.edu/archive/wheatgerm/index.html)  [Mitosis/Meiosis PlayDoh Lab](Genetics/Meiosis%20Mitosis/MeiosisMitosisLabPlayDoh.docx) Sheet  [Snorks](Genetics/DNARNAtraits/DNA_snorks.pdf) ([Answer Key](Genetics/DNARNAtraits/DNA_snorks_key.pdf))  [Zork Genetics](Genetics/DNARNAtraits/zorkgenetics.doc)  [Gene Scene](Genetics/DNARNAtraits/Gene%20Scene%20Handout.doc)  [PhenoType to Traits](Genetics/DNARNAtraits/PhenotypeTraits.pdf)  [DNA Modeling Lab](Genetics/DNARNAtraits/DNAModelingLab.pdf)  [DNA Fingerprinting Lab](Genetics/DNARNAtraits/DNAFingerprintingLab.pdf)  [Build a DNA Molecule](http://gslc.genetics.utah.edu/%20units/%20basics/%20builddna/)  [Have Your DNA and Eat it, too!](http://teach.genetics.utah.edu/content/begin/dna/Have%20Your%20DNA%20and%20Eat%20It%20Too.pdf)  [Trait BINGO Cards](http://teach.genetics.utah.edu/content/begin/traits/bingo.html) | [Haploid vs. Diploid](http://www.youtube.com/watch?v=MU83VWAvUf4)  [Meiosis](http://www.cellsalive.com/meiosis.htm)  [Meiosis #2](http://www.youtube.com/watch?v=D1_-mQS_FZ0)  [Meiosis Square Dance](http://www.youtube.com/watch?v=iCL6d0OwKt8)  [Bill Nye "Genetics" Episode Clips](http://www.youtube.com/watch?v=dPk_V1KkMuU&feature=related)  [Base Pairs](http://www.youtube.com/watch?NR=1&feature=endscreen&v=5raJePXu0OQ)  [Journey into DNA](http://www.pbs.org/%20wgbh/%20nova/%20photo51/%20jour-flash.html)    [DNA Introduction](http://www.eurekascience.com/%20ICanDoThat/%20dna_intro.htm) | [Asexual vs. Sexual cell reproduction and Cell Division Intro](Genetics/Meiosis%20Mitosis/Asexual%20Sexual%20Cell%20Division.ppt)  [Notes](Genetics/Meiosis%20Mitosis/Asexual%20Sexual%20Cell%20Division.ppt)  [DNA to RNA Notes](Genetics/DNARNAtraits/Transcription%20Translation.ppt)  [Double Entry Journal Example](Genetics/DNARNAtraits/DOUBLEENTRYJOURNAL.ppt)    ARTICLES for Activity:  [Article One](http://www.nytimes.com/2008/03/04/health/research/04geno.html?ref=dnaage) [Article Two](http://www.nytimes.com/2008/02/24/health/24dna.html?ref=dnaage) |
| 7.L.2.2 | [DE-Mendel PowerPoint](Genetics/Punnett/DE_MendelandHeredity.ppt)  [Heredity: How Our Parents' Genes Affect Us](http://player.discoveryeducation.com/index.cfm?guidAssetId=6D16C65F-DA37-4968-B8B1-D202A2826F7C&blnFromSearch=1&productcode=DSC)  [Gregor Mendel's Genetic Theory: Experiments and Discoveries](http://player.discoveryeducation.com/index.cfm?guidAssetId=70359E7A-6264-4331-9290-736B7DF57396)  [Punnett Square How-To](http://player.discoveryeducation.com/index.cfm?guidAssetId=AB33E612-2755-4901-8A44-857151E3BB24)  [The Law of Independent Assortment](http://player.discoveryeducation.com/index.cfm?guidAssetId=BE7061DF-9A7A-44C4-A923-B15945A80590&blnFromSearch=1&productcode=US)  [The Law of Segregation](http://player.discoveryeducation.com/index.cfm?guidAssetId=B10C4E0D-DCCC-4A83-A2D0-9284DD8A7966&blnFromSearch=1&productcode=US)  [The F² Generation](http://player.discoveryeducation.com/index.cfm?guidAssetId=017939D0-21E0-46ED-962B-8BA3EC90944A&blnFromSearch=1&productcode=US)  [Punnett Square: Charting Dominant and Recessive Traits](http://player.discoveryeducation.com/index.cfm?guidAssetId=31976C16-12F9-40A6-A69F-C90D4BC84199)  [Punnett Square: Charting Dominant and Recessive Traits](http://player.discoveryeducation.com/index.cfm?guidAssetId=31976C16-12F9-40A6-A69F-C90D4BC84199&blnFromSearch=1&productcode=DSCE)  [Gregor Mendel's Rules of Heredity: Using Punnett Squares](http://player.discoveryeducation.com/index.cfm?guidAssetId=7570E857-9BAE-4732-920F-CF79EACA9201)  [Punnett's Square](http://player.discoveryeducation.com/index.cfm?guidAssetId=AB33E612-2755-4901-8A44-857151E3BB24&blnFromSearch=1&productcode=US)  [Principle of Dominance](http://player.discoveryeducation.com/index.cfm?guidAssetId=857EA64D-8CA5-4E4A-BB7F-83370E679937)  Interactive: [Genetics of Inherited Traits](http://player.discoveryeducation.com/index.cfm?guidAssetId=17E8C271-42B9-4F60-8A8F-5D8E7702AB58&blnFromSearch=1&productcode=DSC)  Article: [Give These People a Hand](http://player.discoveryeducation.com/index.cfm?guidAssetId=A9B99794-BB96-4024-8E1D-53159F2D3A66&blnFromSearch=1&productcode=DSC)  Pedigrees:  [Mendel's Experiments](http://player.discoveryeducation.com/index.cfm?guidAssetId=29abe954-8d82-429b-b738-81cc6a98d02b&blnFromSearch=1&productcode=HUB)  [Pedigree Chart and Family Group Sheet](http://player.discoveryeducation.com/index.cfm?guidAssetId=E99D6147-28F1-4AD2-8C62-8D1D96D367C3&blnFromSearch=1&productcode=US)  [Possible Gametes of Heterozygous Parents](http://player.discoveryeducation.com/index.cfm?guidAssetId=8E954C52-3CE2-424C-9EA0-58572A120C4F&blnFromSearch=1&productcode=DSC)  [Summary 1: From parents to first generation offspring](http://player.discoveryeducation.com/index.cfm?guidAssetId=6FC0D98C-A2B6-4FCA-9478-BBE4D0365CE1&blnFromSearch=1&productcode=DSC)  [Parent genotype frequencies](http://player.discoveryeducation.com/index.cfm?guidAssetId=73BF1E8B-82A7-465E-8E55-F1186EBFCEDC&blnFromSearch=1&productcode=DSC)  [Genotype frequencies - parents](http://player.discoveryeducation.com/index.cfm?guidAssetId=8EACB243-A66A-44A5-A560-2887EB05A9F6&blnFromSearch=1&productcode=DSC)  [Probability of carrier female - answer](http://player.discoveryeducation.com/index.cfm?guidAssetId=BB548479-335A-40EC-8A74-D4F564C7C12A&blnFromSearch=1&productcode=DSC)  [Probability of three girls in a family - Answer](http://player.discoveryeducation.com/index.cfm?guidAssetId=D9B461D5-A222-4E36-9B1B-C991910E42DF&blnFromSearch=1&productcode=DSC)  [Probability of two boys and a girl in a family; Q&A](http://player.discoveryeducation.com/index.cfm?guidAssetId=538B3183-1B2F-43F5-A4A7-D7F0D7422B56&blnFromSearch=1&productcode=DSC)  [Pedigree of trait that skips generation](http://player.discoveryeducation.com/index.cfm?guidAssetId=6587BC0B-4091-4CD4-9A00-6CC1AF78D0E7&blnFromSearch=1&productcode=DSC)  [Red hair pedigree](http://player.discoveryeducation.com/index.cfm?guidAssetId=04127B02-F98E-44F5-97C1-94134DFAF76D&blnFromSearch=1&productcode=DSC)  [Colorblindness pedigree; determination of genotypes](http://player.discoveryeducation.com/index.cfm?guidAssetId=472E5389-ACFB-4E0C-B988-F59CC47536E7&blnFromSearch=1&productcode=DSC)  Virtual Lab: [Genes Make the Rabbit](http://player.discoveryeducation.com/index.cfm?guidAssetId=47ACCF6B-EB99-4CA6-8F42-10DB3F4FCEB6&blnFromSearch=1&productcode=DSC) | [Let’s Make a Baby](Genetics/Punnett/LetsMakeBabyActivity.pdf)  [SpongeBob Punnett Square Practice](Genetics/Punnett/U5%5b1%5d.LP5%20Spongebob%20Genetics%20WS.pdf)  [Gummy Bear Breeding Lab](Genetics/Punnett/GummyBearLabSheet.docx)  [What’s on Your Genes? Article](http://www.sciencenewsforkids.org/2011/09/what%E2%80%99s-on-your-genes/)  [Punnett Square Practice](Genetics/Punnett/Punnett_square_worksheet.doc)  [Anastasia Dead or Alive? Lesson](http://www.pbs.org/wgbh/nova/teachers/ideas/2209_anastasi.html)   * [Related WebQuest](http://www.biologycorner.com/projects/bones/index.html)  [Recovering the Romanovs](http://www.dnai.org/teacherguide/pdf/ts_romanovs.pdf)  * [PowerPoint](http://www.marinebiotech.net/program/implementation/ay_content/showcase/presentations/Romanov_DNA_mystery_ppt.pdf)   [Pedigree Project](Genetics/Pedigrees/PedigreeProject.pdf) | [Punnett Square Overview](http://www.youtube.com/watch?v=d4izVAkhMPQ) | [Punnett Square 6 steps to Success](Genetics/Punnett/PUNNETSQuares.ppt)  [Probability of Inheritance Notes](Genetics/Punnett/ProbabilityofInheritance.ppt) |
| 7.L.2.3 | [Genetic Diseases/Designer](http://player.discoveryeducation.com/index.cfm?guidAssetId=15de991c-b064-490d-a5e6-c1454be6a27e) [[DE-Genes Powerpoint](http://player.discoveryeducation.com/index.cfm?guidAssetId=15de991c-b064-490d-a5e6-c1454be6a27e)](Genetics/Genetic%20Diseases/DE_Genes.ppt)  [[Genes control biochemical events](http://player.discoveryeducation.com/index.cfm?guidAssetId=15de991c-b064-490d-a5e6-c1454be6a27e)](http://player.discoveryeducation.com/index.cfm?guidAssetId=366B6116-265D-4413-88F9-696130212D03)  [Babies](http://player.discoveryeducation.com/index.cfm?guidAssetId=15de991c-b064-490d-a5e6-c1454be6a27e) Video  [Genetics: How Genes Contribute to Obesity](http://player.discoveryeducation.com/index.cfm?guidAssetId=5A035757-B841-4114-987F-5BBEE960F3A3&blnFromSearch=1&productcode=DSC)  [Genes, Disease, and Ethics](http://player.discoveryeducation.com/index.cfm?guidAssetId=C49DD1EA-F2D7-4CE3-B8BF-9E47E5411A0C&blnFromSearch=1&productcode=US)  [Mutation: Negative and Positive Impacts](http://player.discoveryeducation.com/index.cfm?guidAssetId=E755C687-5B6A-4C4D-AE8B-BC2C4D4C2AC2&blnFromSearch=1&productcode=DSCE)  [Genetic Problems](http://player.discoveryeducation.com/index.cfm?guidAssetId=B67E102B-1559-4DA5-BDEF-44D4A108A5CA&blnFromSearch=1&productcode=US)  [Deadly Disease](http://player.discoveryeducation.com/index.cfm?guidAssetId=01FDE07A-3915-49BB-BFE1-B717C683E9FA&blnFromSearch=1&productcode=US)  [Genetic Disease](http://player.discoveryeducation.com/index.cfm?guidAssetId=A5E5489F-12DE-47C0-BB3A-393146B866AD&blnFromSearch=1&productcode=DSC)  [Families and Genetic Disease](http://player.discoveryeducation.com/index.cfm?guidAssetId=C5A218B1-A0A3-4058-B9C6-03ED6002196D&blnFromSearch=1&productcode=US)  [Genetic Case Study: Addison's Disease](http://player.discoveryeducation.com/index.cfm?guidAssetId=F810D9DC-4C6B-4500-9EB1-99A6855D0226&blnFromSearch=1&productcode=US)  [Cystic Fibrosis](http://player.discoveryeducation.com/index.cfm?guidAssetId=7A00691D-2F20-4F66-BE08-663F290D4E7C&blnFromSearch=1&productcode=US)  [What Is Sickle Cell Anemia?](http://player.discoveryeducation.com/index.cfm?guidAssetId=15698172-2753-4D3C-B07F-F2A6E4C09B65&blnFromSearch=1&productcode=DSC)  [Cystic fibrosis; potential body sites for gene therapy](http://player.discoveryeducation.com/index.cfm?guidAssetId=6CD6C2BD-2540-4A38-8E8F-3AD1EB6BAD25&blnFromSearch=1&productcode=DSC)  [Huntington disease pedigree; autosomal dominant](http://player.discoveryeducation.com/index.cfm?guidAssetId=4C7B9DC9-54EB-4EA5-B28D-01A7135C05D6&blnFromSearch=1&productcode=DSC)  [Behavioral disease pedigree](http://player.discoveryeducation.com/index.cfm?guidAssetId=1976930C-07F9-47DB-9F20-6E767C83E1AA&blnFromSearch=1&productcode=DSC)  [X-linked dominant trait; pedigrees](http://player.discoveryeducation.com/index.cfm?guidAssetId=00791AC5-DF25-4E3F-9F68-FA65BA175651&blnFromSearch=1&productcode=DSC) | [Fish Sticks Lab](Genetics/Punnett/FishSticks.pdf) – Genetics & Environmental Impact  **Human Genome Project**  [Human Genome Project](http://en.wikipedia.org/%20wiki/%20Human_Genome_Project)    [Student Guide to the Human Genome Project](http://www.ornl.gov/%20sci/%20techresources/%20Human_Genome/%20education/%20students.shtm) [http://www.classzone.com/books/ml\_science\_nc7/page\_build.cfm?id=resour\_ch5&u=3 - item](http://www.classzone.com/books/ml_science_nc7/page_build.cfm?id=resour_ch5&u=3#item)  **Mutations**  [What Are Genetic Disorders?](http://gslc.genetics.utah.edu/%20units/%20disorders/%20whataregd/)    [Mutations](http://www.brooklyn.cuny.edu/%20bc/%20ahp/%20BioInfo/%20SD.Mut.HP.html)    [What Is a Mutation?](http://gslc.genetics.utah.edu/%20units/%20disorders/%20mutations/)  **DNA Technology**  [Applications: DNA Science](http://www.dnai.org/%20d/index.html)    [Gene Therapy](http://www.ornl.gov/%20TechResources/%20Human_Genome/%20medicine/%20genetherapy.html)    [The Genomic Revolution](http://www.amnh.org/%20exhibitions/%20genomics/)  Diseases   * [Huntington's Disease](http://learn.genetics.utah.edu/content/disorders/whataregd/hunt/index.html) * [Sickle Cell Disease](http://learn.genetics.utah.edu/content/disorders/whataregd/sicklecell/index.html) * [Klinefelter's Syndrome](http://learn.genetics.utah.edu/content/disorders/whataregd/klinefelter/index.html) * [Down's Syndrome](http://learn.genetics.utah.edu/content/disorders/whataregd/down/index.html) | [Genetics Case Studies WebLinks](Genetics/Genetics%20Case%20Studies%20-Preview.docx) | [Mutations: Diseases & Cancer](Genetics/DNARNAtraits/MutationsDiseases.ppt) |
| Environmental Connections | [Healthy Habits](http://player.discoveryeducation.com/index.cfm?guidAssetId=F4E171E3-C9D6-469F-A84A-1585F4950180&blnFromSearch=1&productcode=US)  [Big as Life: Obesity in America](http://player.discoveryeducation.com/index.cfm?guidAssetId=E4082C90-EF6E-4E64-A080-03E63F22103C)  [Behavior](http://player.discoveryeducation.com/index.cfm?guidAssetId=212BACF0-51C4-420E-9AB3-38A801975626&blnFromSearch=1&productcode=DSCE)  [The Genetics of Twins](http://player.discoveryeducation.com/index.cfm?guidAssetId=1EBC230C-B7DB-4770-B2F4-7E99A0DCB6C7&blnFromSearch=1&productcode=US)  [Double Take: The Genetics of Twins](http://player.discoveryeducation.com/index.cfm?guidAssetId=314F44F2-DBD0-42A1-9519-DCCFD5DDD477&blnFromSearch=1&productcode=US)  [Twins Separated at Birth](http://player.discoveryeducation.com/index.cfm?guidAssetId=A5516AF1-D2F4-4639-962E-8FE17FAA5C0D&blnFromSearch=1&productcode=US)  [Better Choices](http://player.discoveryeducation.com/index.cfm?guidAssetId=8AC81159-EE85-4B83-AA1A-389331037B15)  [Separated at Birth: Environment vs. Heredity in Identical Twins](http://player.discoveryeducation.com/index.cfm?guidAssetId=e1902064-daa2-4d3e-86bc-a4ac1f3d6201&blnFromSearch=1&productcode=HUB)  [Subjective Well-Being: The Genetic Determination of Happiness](http://player.discoveryeducation.com/index.cfm?guidAssetId=49583915-775F-4E43-858E-D17E9A4D195B) |  |  |  |

Sample W1 Task: Big Question: **Should we allow genetic modification?**

1. Should we be allowed to genetically modify our children? *Consider the following: If we genetically modify our children, we could eliminate some genetic diseases such as Tay Sachs and Down Syndrome. If we genetically modify our children, then we are changing nature’s normal course.*
2. Should we be allowed to genetically modify our food? *Consider the following: If we don’t genetically modify our food, then we wouldn’t have enough food to feed everyone in our nation. If we do genetically modify our food, then we put local farmers out of work as well as put our health at risk*.
3. Is it ethically responsible for us to change nature? Consider the following: “designer babies” where we choose what we want our child to look like and GMO’s.
4. Scientifically, does the concept of race exist?
5. How could we genetically engineer someone to look completely different? Should we?