

Research question

1. **c p n states relationship as: $DV=f(IV)$**
2. **c p n states IV range that can be manipulated (How much? How many?)**
3. **c p n states directly measureable DV (Quantifiable?)**
4. **c p n focuses question (specific outcome-not too broad)**
5. **c p n names organisms w/binomial nomenclature (*Drosophila melanogaster*)**

(P) How do we determine the body color genotypes of a yellow male crossed with wild female drosophilae by looking at the phenotypes ratio of their 2 generations offspring?

1. n (Restate: What are the phenotypic ratios of 2 generations of flies (DV) when a yellow male is crossed with a wild type female fruit fly f(IV) (*Drosophila melanogaster*)?)
2. p (states 2 generations, but doesn't give indication of how many flies present in each generation)
3. c (phenotypic ratio)
4. p ("How" is vague...)
5. n (missing italics, species name, not capitalized)

(P) Are brown eyes a dominant or recessive trait in fruit flies (*drosophila melanogaster*), and is the trait sex-linked or autosomal?

1. p (Restate: Do the phenotypic ratios for the brown eye phenotype in fruit flies (*Drosophila melanogaster*) of the F1 generation indicate that it is a dominant/recessive and sex-linked/autosomal (DV) when a brown eyed male is mated with a wild-type female f (IV)?
2. n (How many generations? How many flies in each generation?)
3. p (measurable but not presented in a quantitative manner)
4. p (It is a direct question but doesn't allude to how you are going to answer it)
5. p (first word lower case)

(P) Is the "wild" type phenotype dominant over the black body colour phenotype in *drosophila melanogaster* and is it sex-linked?

1. p (Restate: Do the phenotypic ratios for the black body phenotype in fruit flies (*Drosophila melanogaster*) of the F1 generation indicate that it is a dominant/recessive and sex-linked/autosomal (DV) when a black bodied male is mated with a wild-type female f (IV)?
2. n (How many generations? How many flies?)
3. n (How will you measure it?)
4. p (How will you quantifiably determine the answer?)
5. p (first word lower case)

(P) How do we determine the body colour genotypes of offspring of a black male mated with a wild type female fruit fly by observing the phenotype ratio of their F2 generation?

1. p (Do the phenotypic ratios of the F2 generation (DV) of a cross between black bodied male fruit fly (*Drosophila melanogaster*) and a wild type female fruit fly f(IV) indicate whether the black bodies male's genotype is homozygous dominant or heterozygous?
2. p (How many flies?)
3. c (phenotypic ratio)
4. c
5. n (missing)

(P) What is the inheritance pattern of a male wild type fruit fly (*Drosophila melanogaster*) mating with a female purple eyed fruit fly?

1. c
2. n (number of generations, flies not indicated)

3. n (How do you quantify "inheritance pattern"?)

4. n (what is meant by inheritance pattern? Phenotypic ratio?)

5. p (italicized)

(C) What would be phenotype ratio of generations F1 and F2 when crossing a female fruit fly (*Drosophila melanogaster*) of purple eyes with a male fruit fly with wild eyes?

1. c

2. c/p (How many flies in each generation?)

3. c

4. c

5. p (italicized)

(P) What would the phenotypes of the F1 and F2 generations be when crossing a female fruit fly with purple eyes with a male fruit fly with wild eyes?

1. c

2. c/p (How many flies in each generation?)

3. p (phenotypes isn't quantifiable. . . how about phenotypic ratios?)

4. p

5. n (missing)

(P) In *Drosophila melanogaster* (fruit flies), if we mate a male vestigial winged with a female wild-type, while changing no other characteristics, what will be the ratio of vestigial to wild-type in the F1 and F2 generations? Is the trait of vestigial wings sex-linked or autosomal?

1. n Restate: Does the phenotypic ratio of vestigial to wild-type wings in the F1 and F2 generations (DV) indicate that vestigial wings is a sex linked trait when crossing a male vestigial winged fruit fly (*Drosophila melanogaster*) with a female wild-type fruit fly f(IV)?

2. c/p (How many flies?)

3. c

4. c

5. p (italicized, capitalized)

(P) How many affected offspring's are present when a purple-eyed fruit fly is cross-bred with a wild-eyed fruit fly?

1. c

2. n (How many generations? How many flies?)

3. n (How is affected quantifiable?)

4. p (what is meant by affected?)

5. n (missing)

(P) How does mating a homozygous dominant, female, wild type *Drosophila melanogaster* (the common fruit fly), with a homozygous recessive, white-eyed fruit fly affect the phenotypic and genotypic ratio (in number of offspring) of eye color in the F1 and F2 generation offspring? Is this a sex-linked or autosomal trait?

1. n: Does the phenotypic ratio of white-eyed to wild type eyes in the F1 and F2 generations (DV) indicate that white-eyes is a sex linked trait when crossing a male white eyed fruit fly (*Drosophila melanogaster*) with a female wild-type fruit fly f(IV)?

2. c/p (How many flies?)

3. c (phenotypic ratios)

4. c

5. c (!)

(N) Comparing the wild type wing with the apterous wing, which wing has more dominance and how does this affect the inheritance of F1 generations and F2 generations?

1. n How is the inheritance of F1 and F2 generations affected when comparing the wild type wing and the apterous wing?
2. p (How many flies in each generation?)
3. n (How do you quantify inheritance?)
4. n
5. n (missing)

(P) How can we determine the body colour genotypes of 1 yellow male and 1 wild (orange) female *Drosophila melanogaster* (fruit fly), by observing the phenotype ratios of two generations of their offspring?

1. n What are the phenotypic ratios of 2 generations of flies (DV) when a yellow male is crossed with a wild type female fruit fly f(IV) (*Drosophila melanogaster*)?
2. p (How many flies?)
3. c
4. c
5. p (italicized)

(N) What is the inheritance pattern of a purple-eyed female Fruit Fly crossed with a wild type male Fruity fly?

1. c
2. n (How many flies? How many generations?)
3. n (What is an inheritance pattern? How do you quantify it?)
4. n
5. n (missing)

(P) If a homozygous white eyed male fruit fly (*Drosophila melanogaster*) is mated with a homozygous wild type red-eyed female fruit fly (*Drosophila melanogaster*), what would the ratio be for the F1 and F2 generations produced for the number of offspring with red eyes to the number with white eyes? Hence, would the ratios reveal that the trait for white eyes is recessive and sex-linked?

1. n Restate: Does the phenotypic ratio of white-eyed to wild type eyes in the F1 and F2 generations (DV) indicate that white-eyes is a sex linked trait when crossing a male white eyed fruit fly (*Drosophila melanogaster*) with a female wild-type fruit fly f(IV)?
2. c/p (How many flies?)
3. c
4. c
5. c (!)

Research question

1. **c p n states relationship as: $DV=f(IV)$**
2. **c p n states IV range that can be manipulated (How much? How many?)**
3. **c p n states directly measureable DV (Quantifiable?)**
4. **c p n focuses question (specific outcome-not too broad)**
5. **c p n names organisms w/binomial nomenclature (*Drosophila melanogaster*)**