

5. The angles in the same segment of a circle are equal to one another.
6. Describe a square about a given circle.
7. Given the base, the vertical angle, and the perpendicular in a plane triangle, to construct it.

NATURAL PHILOSOPHY.

1. Explain the telephone and microphone, and their application in practice.
2. How can the amount of moisture present in the atmosphere which immediately surrounds the observer in any moment of time be observed, and in what terms is it expressed?
3. How are differences of altitude measured with the barometer, and what corrections have to be applied?
4. What is latent heat? Describe the application of the air-pump to effect refrigeration.
5. Describe the forms of the electric light known as the "arc light" and the "incandescent light."
6. Describe the turbine water-wheel.
7. Explain the action of the siphon.
8. Describe the methods for ascertaining the specific gravity of solids, liquids, and gases.

CHEMISTRY.

1. What changes does arsenic undergo when heated (1) by itself in a current of CO_2 , (2) in contact with air, (3) in contact with chlorine?
2. How can baric sulphate be converted into baric chloride? Give formulæ.
3. What is the percentage of boric anhydride (B_2O_3) in borax?
4. Describe the formation of ammonium amalgam, and explain why ammonium is considered to be a metal although it is composed of two elements.
5. Explain the bleaching action of chlorine.
6. How is hydrochloric-acid gas prepared, and what are its properties?
7. Explain why two molecules of hydrochloric acid are required to act upon an atom of zinc.

HISTORY.

1. What were the duties and privileges of the priests of the ancient Britons, the objects of their worship, and kind of sacrifices?
2. Explain "præmunire," "Lollards," "Fifth-Monarchy men," "Covenanters," "Self-denying Ordinance."
3. How did Henry IV. obtain the Crown?
4. Relate the proceedings of the Long Parliament, and give dates and circumstances of its first assembling and its final dissolution.
5. Describe the origin and growth of England's connection with, and power in, India.
6. What were the most remarkable legislative changes advocated in the reign of George III. which have since been effected?

BOOK-KEEPING.

1. The *Dr.* side of Stock in a merchant's ledger on commencing business amounts to £9,000, and the *Cr.* side to £50,000: the *Dr.* side of Profit and Loss at the time of adjusting his books amounts to £1,250, and the *Cr.* side to £875: the *Dr.* side of Merchandise amounts to £22,000, and the *Cr.* side to £16,000; the goods on hand are valued at £8,375: the *Dr.* side of ship "Nelson's" account is £17,500, and the *Cr.* side £5,500; the ship "Nelson" is unsold and valued at £16,000: the *Dr.* side of Cash amounts to £34,000, and the *Cr.* side to £19,375: the *Dr.* side of Bills Receivable amounts to £28,600, and the *Cr.* side to £18,000: the *Dr.* side of Bills Payable amounts to £11,000, and the *Cr.* side to £15,600: the *Dr.* side of J. Harvey's account is £7,000, and the *Cr.* side £8,000: the *Dr.* side of W. Brown's account is £6,400, and the *Cr.* side £5,000: the *Dr.* side of T. Jones's account is £8,000, and the *Cr.* side £8,400: the *Dr.* side of R. Morris's account is £11,000, and the *Cr.* side £9,000. *Set out the transactions under the respective accounts, and give a statement of the assets and liabilities, the gains and losses, and the merchant's present net capital.*

2. A merchant's property on commencing business amounts to £75,000, and his debts to £25,000. The result of his several transactions is as follows: His purchases of merchandise amount to £30,000, and the sales to £32,000: the cost and outlay for the ship "Nero" is £16,450, and the returns £8,000; the ship is unsold and valued at cost, £15,000: he ships goods as an adventure to Halifax, the costs and charges amounting to £6,300: his receipts of cash amount to £50,000, and the disbursements to £21,000: the bills received from his correspondents amount to £17,200, and those disposed of to £10,400: he has issued or accepted bills to the amount of £31,526, and the amount of such bills as have been redeemed or retired from circulation is £19,513: Brown and Co. owe him £17,500, and he owes them £21,000: J. Taylor is indebted to him £3,000, and he owes Taylor £2,000: S. Johnson owes him £6,000, and he is indebted to Johnson £4,000: Peterson and Co. owe him £8,500, and he owes them £2,400: he owes T. Fyfe £950: Jackson and Co. owe him £8,100, and he owes E. Russell £300: his gains as a factor amount to £637: and his outlay for rent, salaries, and petty expenses amounts to £1,650. *Required the present amount of the merchant's assets and liabilities, his gains and losses, and his net capital.*

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JUNIOR. ENGLISH.

1. Write the passage dictated to you.
2. Classify verbs, and explain each class, giving illustrative examples.