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| Multiplikation Leiteraufgaben | |
| **Lehrplaneinheit** | Grundrechenarten |
| **Leitidee** | Zahl |
| **Kompetenzen** | Mit symbolischen Elementen der Mathematik umgehen |
| **Sozialform , Methode** | Übung in EA, PA, GA … (siehe Beschreibung) |
| **Ziel, Erwartungshorizont** | Umgang mit Zahlen und Automatisierung |
| **Zeitlicher Umfang** | ca. 3 x 20 Minuten |
| **Didaktische Hinweise** | Rechnen ohne Taschenrechner |

Beschreibung:

Die Aufgabengruppen sind in drei Schwierigkeitsstufen eingeteilt.

Der Fachlehrer kann die Aufgabengruppen je nach Leistungsvermögen der Schüler zuteilen oder die Schüler selbst wählen lassen.

Der zeitliche Umfang für eine Aufgabengruppe sollte 20 Minuten nicht überschreiten.

Für die Bearbeitung der Aufgaben kann der Fachlehrer aus verschiedenen Sozialformen wählen.

Einzelarbeit (EA)

Eignet sich besonders für die Wiederholung und Sicherung der erworbenen Kenntnisse im Unterricht. Die Schüler lernen selbstständig zu arbeiten und mit Schwierigkeiten selbst fertig zu werden, ohne gleich aufzugeben. Nur bei unüberwindbaren Problemen kann der Fachlehrer Hilfestellung leisten.

Partnerarbeit (PA)

Eignet sich besonders nach einer Frontalphase des Unterrichts und wird mit einem Auftrag und Zeitvereinbarung eingeleitet. Die Schüler lernen sich gegenseitig zu helfen und zu unterstützen. Der Fachlehrer sollte darauf achten, dass die Schülerpaare zu einander passen und wirklich zusammen arbeiten. Die Schüler sollten wissen, dass eine Ergebniskontrolle (z.B. Vortrag, Musterlösungen …) stattfindet.

Gruppenarbeit (GA)

Eignet sich gut als Übungs- und Wiederholungsphase. Die Schüler können sich gegenseitig helfen und soziale Kontakte knüpfen. Es stärkt das Selbstvertrauen der Schüler, da sie selbstständig arbeiten dürfen. Für die Zusammensetzung der Gruppen ist eine heterogene Einteilung von Vorteil. Weitere Möglichkeiten der Binnendifferenzierung sind: Leistung, Interesse, Schwierigkeitsgrad, Zufall, usw.

Die Schüler sollten wissen, dass eine Ergebniskontrolle (z.B. Vortrag, Präsentation, Musterlösungen …) stattfindet.

Schüler helfen Schüler (SHS)

Diese Form fordert ein hohes Maß von Verantwortung der Schüler und stärkt das eigenverantwortliche, selbstbestimmte und kooperative Lernen (Lernen durch Lehren). Die gesamte Klasse wird zur Kooperation aufgefordert und sollte wissen, dass eine echte Leistungsüberprüfung stattfindet.

SHS kann in geeigneten Schülergruppen über das gesamte Schuljahr stattfinden, oder für einzelne Hohlstunden genutzt werden (Ganztagsbetreuung).

Wettbewerb in differenzierten Leistungsgruppen

Der Lehrer oder die Schüler entscheiden in welche Aufgabengruppe sie gehen (stärkere Schüler sollten nicht in die leichteste Gruppe gehen). Wer am schnellsten und richtig rechnet bekommt eine besondere Belohnung. Auch der zweite und dritte Platz sollte belohnt werden.

Lernen an Stationen

Rechne ohne Taschenrechner und gib die Lösungen an.

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| **Nr.** | **Aufgabe** | **Platz für Nebenrechnungen** | | | | | | | | | | | | | | | | | | | | | |
| 1. | 7 ⋅ 9 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Finde dein Ergebnis.** | | | | | | | | | | | | | | | | | | | | | |
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| 2. | 9 ⋅ 4 = |  |  |  |  |  |  |  |  | 720 |  |  |  |  |  |  | 63 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 360 |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  | 144 |  |  |  |  |  |
| 3. | 0,5 ⋅ 3 ⋅ 4 = |  |  |  |  |  |  |  |  |  |  | 11 |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  | 36 |  |  |  | 320 |  |  |  |  |  |  |  |  |  |
| 4. | 0,25 ⋅ 10 ⋅ 8 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 5. | 12 ⋅ 0 ⋅ 7 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 6. | 5 ⋅ 8 ⋅ 8 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 7. | 10 ⋅ 6 ⋅ 12 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 8. | 22 ⋅ 5 ⋅ 0,1 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 9. | 12 ⋅ 1 ⋅ 12 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10. | 6 ⋅ 15 ⋅ 4= |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Rechne ohne Taschenrechner und gib die Lösungen an.

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| **Nr.** | **Aufgabe** | **Platz für Nebenrechnungen** | | | | | | | | | | | | | | | | | | | | | |
| 1. | 21 ⋅ 32 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Finde dein Ergebnis.** | | | | | | | | | | | | | | | | | | | | | |
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| 2. | 15,5 ⋅ 320 = |  |  |  |  |  |  |  |  | 435 |  |  |  |  |  |  | 4960 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 223 |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  | 594 |  |  |  |  |  |  |  | 3850 |  |  |  |  |  |  |
| 3. | ⋅ 33 ⋅ 54 = |  |  |  |  |  |  |  |  |  | 1111 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 1050 |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  | 2222 |  |  |  |  |  |  | 483 |  |  |  |  |  |  |  |
| 4. | 23 ⋅ 105 ⋅  = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 5. | 0,5 ⋅ 70 ⋅ 110 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 6. | 49 ⋅ 150 ⋅  = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 7. | 24 ⋅  ⋅111,5 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 8. | 0,5 ⋅  ⋅ 4444 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 9. | 72,5 ⋅ 12 ⋅ 0,5 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10. | 1111 ⋅  ⋅ 22 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Rechne ohne Taschenrechner und gib die Lösungen an.

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| **Nr.** | **Aufgabe** | **Platz für Nebenrechnungen** | | | | | | | | | | | | | | | | | | | | | |
| 1. | 82 ⋅ 936 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Finde dein Ergebnis.** | | | | | | | | | | | | | | | | | | | | | |
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| 2. | 59 ⋅ 5369 = |  |  |  |  |  |  |  |  | 144531 |  |  |  |  | 76752 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 234,651 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 352,947 |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 3. | 9765 ⋅ 19 = |  |  |  |  |  |  | 369,86544 |  |  |  |  |  |  |  | 70,994 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 185535 |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  | 316771 |  |  |  |  |  | 405,02678 |  |  |  |  |  |  |  |  |  |
| 4. | 2727 ⋅ 53 = |  |  |  |  |  |  |  |  |  |  | 197,0138 |  |  |  |  |  |  |  |  |  |  |  |
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| 5. | 72,03 ⋅ 4,9 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 6. | 5,1 ⋅ 46,01 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 7. | 4,19 ⋅ 47,02 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 8. | 23,05 ⋅ 3,08 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 9. | 56,806 ⋅ 7,13 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10. | 43,74 ⋅ 8,456 = |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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